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SPECIAL ISSUE • SPRING 2006

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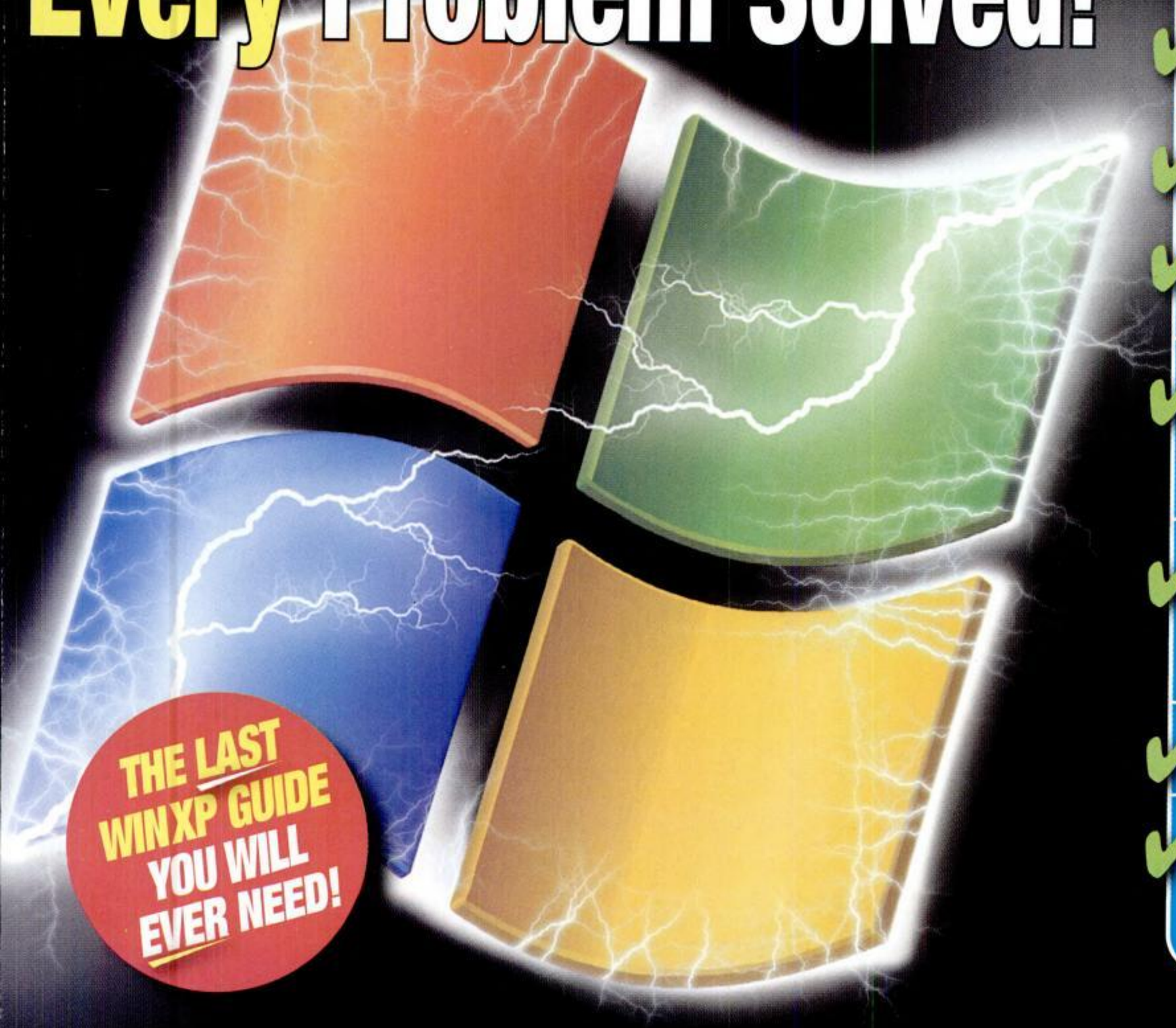

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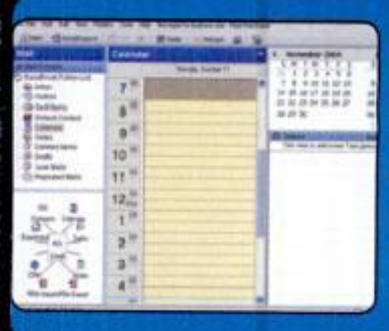

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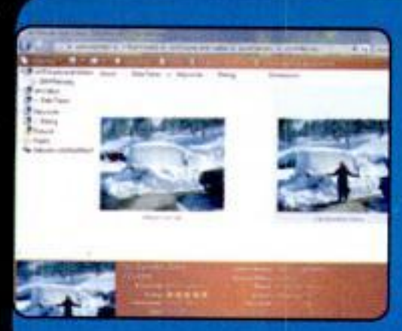

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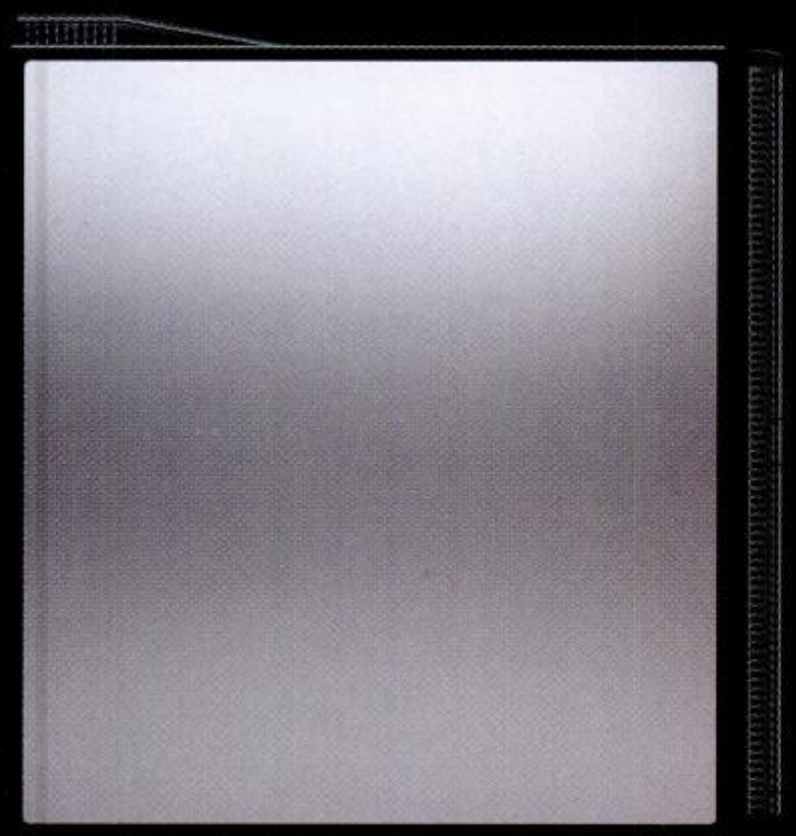

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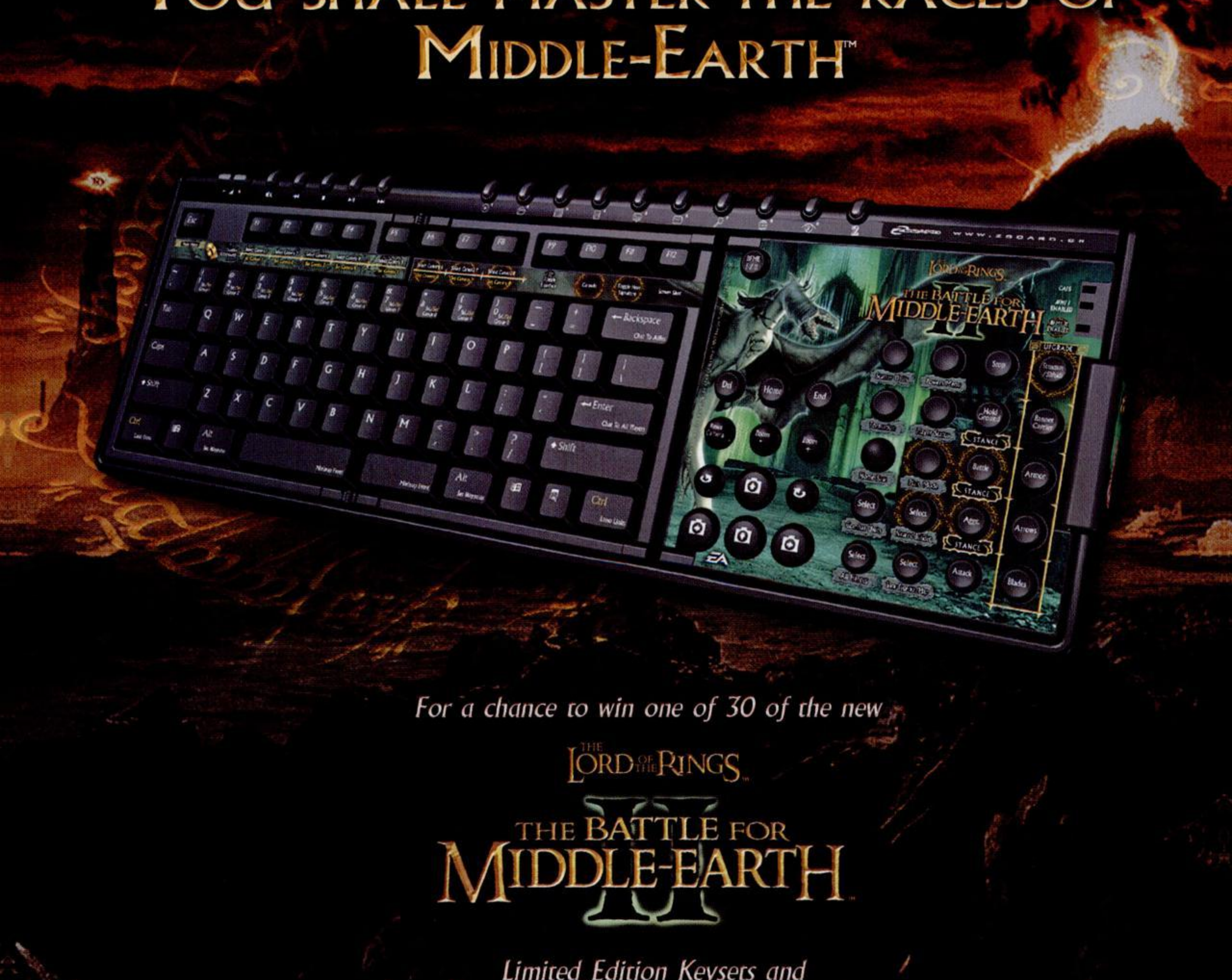

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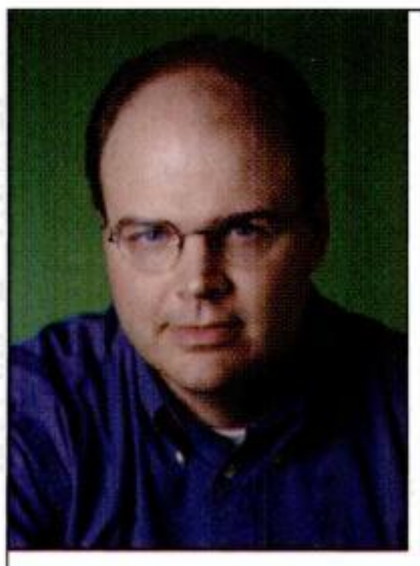

Release Notes

Outside the Box

Too often, we summarily accept the status quo without even a moment's thought. If everyone else is swimming upstream, then you should be, too, right? Not necessarily — particularly when it comes to the way you use the most popular operating system in the world: Windows XP.

It's easy to assume that because *Internet Explorer* came pre-installed on your PC, it's the *best* browser — after all, it's from Microsoft. It's just as reasonable to assume that because most of the business world (and home offices) relies on *Office* by default, you should as well.

The safest route is to also think that Win XP arrived on your PC's hard drive in perfect working order, and that there's nothing you can do to make it better. Or maybe you *have* considered mucking about with Windows but have held off, thinking you'd do irreparable harm to your PC in the process.

Hopefully, since you're reading this, you at least fall into one of these two groups. The goal of this issue is to help you change your way of thinking when it comes to how you use your PC and what you put on its hard drive. More specifically, we want to help you step outside the box a bit and, at the very least, try some alternatives that you may not have known existed.

For starters, while *Internet Explorer* may have a veritable stranglehold on browser marketshare, we believe that Mozilla's *Firefox* represents a much more elegant and flexible way to surf the web. We've got an in-depth story about exactly why we like this browser so much, and we show you how to customize it to your liking using our favorite extensions.

We also take a look at five promising alternatives to *Microsoft Office* — you don't *have* to spend $400 for a suite of productivity apps. Heck, one of the strongest options is free, so why not give it a go?

Finally, the rest of this issue is jam-packed with tips, tweaks, and outright hacks that share one common goal: to make Win XP a more efficient, friendlier, and safer operating system. (All hacks are tested and come with *Maximum PC*'s seal of approval. Follow our guidelines, and there's no reason to fear for your PC's safety.)

Now you have no excuse to stick with the status quo, at least when it comes to how you use your PC. So jump on in, the water's fine — and let us know what you think.

— Stephen P. Klett Jr.
sklett@maximumpc.com

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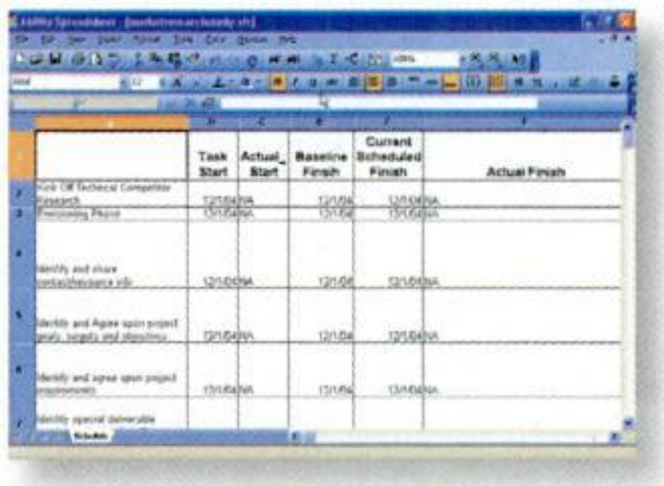

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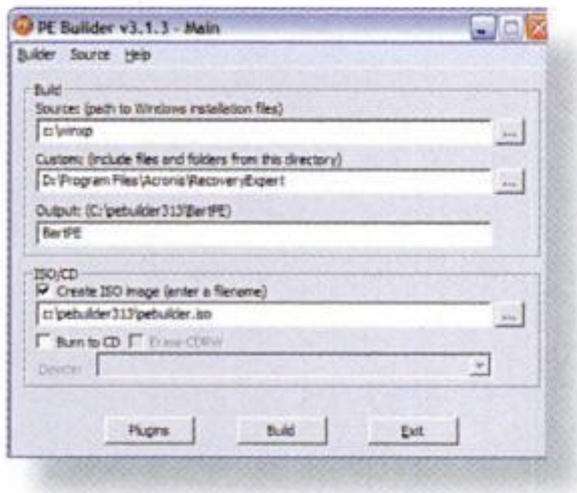

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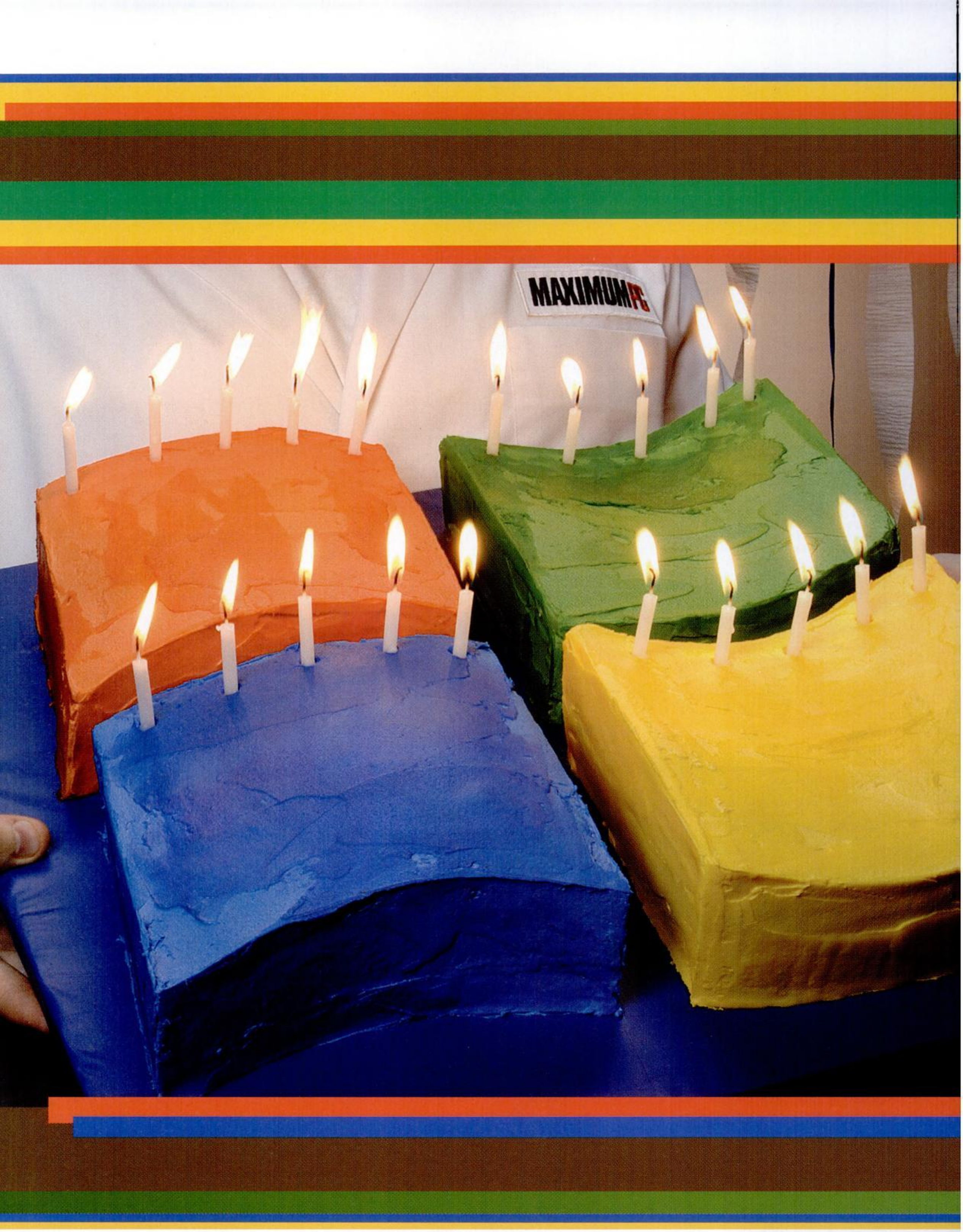

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IT'S WINDOWS' 20TH BIRTHDAY, AND WE'VE STOLEN MICROSOFT'S SCRAPBOOK—FROM BABY PICTURES TO ALL GROWN UP!

BY JASON COMPTON

In 1985, Microsoft launched a quaint little graphical shell for its command-line operating system called "Windows." Over the next decade, amid intense competition from the other personal-computing contenders—the Mac, the Amiga, and Atari ST—Windows eventually clawed its way to the top of the OS heap. The early versions of Windows wouldn't have made any but the most generous of "Top 5 Operating System" lists, yet today, as Windows celebrates its 20th birthday, it's just about the only game in town, having defeated all comers.

From the humble beginnings of Windows 1.0 to the nadir of Windows ME to the hopefully bright future of Vista, it's all here. Is Windows' success a testament to a masterwork of design? A victory for canny market strategy? A Triumph of The Bill? A horrible historical error? Judge for yourself as we lead you through the improbable evolution of Windows, from shaky, uncertain beginnings to king of the desktop computing heap.

Special thanks to Nathan Lineback and Toastytech.com for screenshots of classic Windows versions!

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Windows Turns 20!

1985 to 1989 ▼

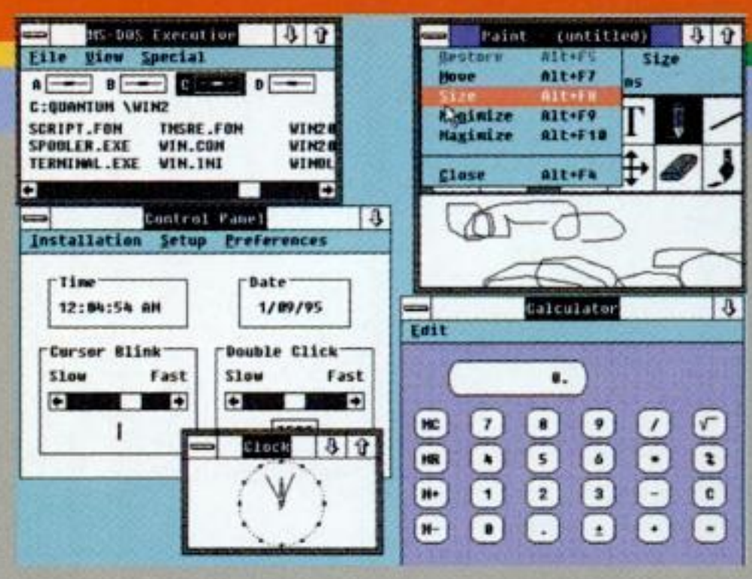
WINDOWS 1.X

The face that today launches hundreds of millions of computers was downright fugly in the beginning. Launched from DOS, it provided graphical file management and some basic productivity tools, but third-party application support was virtually nonexistent. Application windows couldn't overlap, they could only be tiled (some pop-up windows and preferences would overlay on the main windows). Multiple applications could be opened in the Windows environment, but it wasn't the "multitasking" we use today. The "in focus" app, in which you were working, locked the CPU. Much of the core API hasn't changed since 1.01, however... with a little light hackery, Windows 1.x applications can be loaded in XP!

WINDOWS 3.1

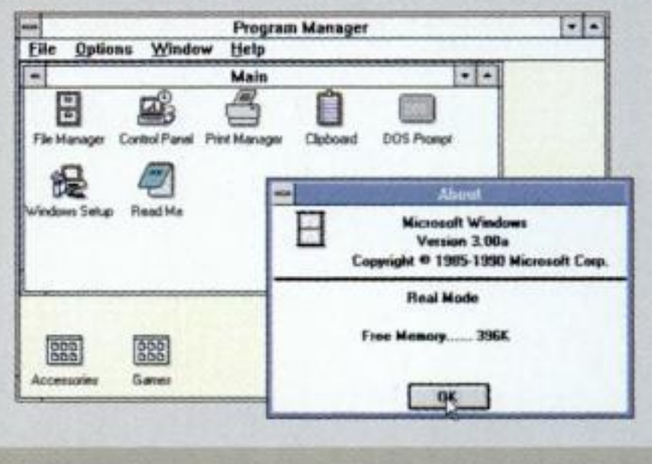
Windows' multitasking capabilities still weren't great, but in the 3.1 upgrade, they got better. Support for much more hardware meant that Windows would run on more computers. Burgeoning developer support and the hundreds of new apps that resulted made Windows 3.1 the first version Microsoft could get OEMs to package and preinstall on new computers. When users needed a GUI, they naturally turned to the one already sitting on their machine. Windows 3.1 also marks the first time Windows could use a paging file on the hard drive instead of system RAM.

WINDOWS 2.X (AKA WINDOWS/286, WINDOWS/386)



The visual foundation of Windows starts to take hold here, as the File Manager (back then known as MS-DOS Executive) is finally augmented by onscreen icons. Windows could overlap, and then the OS started to look like a real GUI. For the first time, application developers started to give Windows a serious look—even as the primary environment in which to develop programs. The 386 version meant that Windows could finally run 32-bit code and address memory beyond the 640K DOS barrier, enabling more (and more interesting) applications to be run.

WINDOWS 3.0

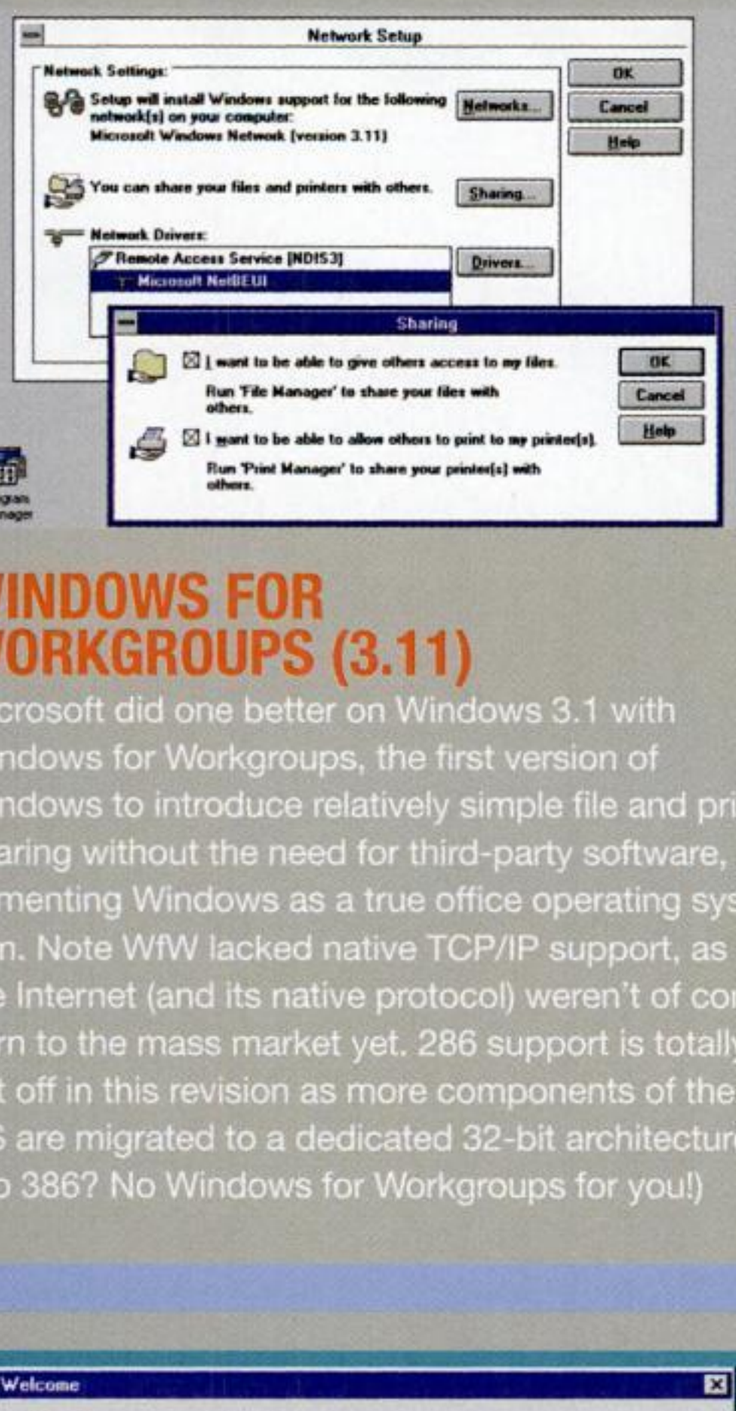


By sloughing off the legacy of the 286's 16-bit architecture, Windows 3.0 was poised for success. Developers embraced the fully 32-bit platform: "It was a horrible mess to try to do anything before, when you had to always be aware of problems dealing with data larger than 64K," says Michael Geary, designer of *Adobe Type Manager* and a number of other Windows applications over the past 19 years. The introduction of the VxD driver system also made it possible to write more powerful Windows applications.

WINDOWS NT 3.1

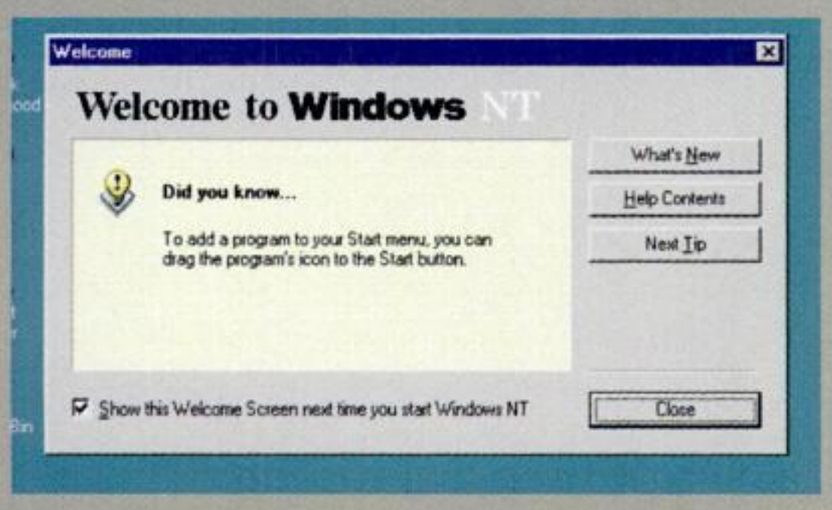
Way back in 1988, Microsoft knew that running Windows on top of DOS was not feasible in the long term, so it began development of Windows NT. First released in July 1993, NT 3.1 looked like Windows 3.1 (right down to the still-befuddling Program Manager "superwindow"), but under the hood was a stable 32-bit native kernel, although support for some 16-bit Windows applications was still provided. During NT's development, Intel hadn't locked down the CPU market, so Microsoft developed versions of NT for other CPU architectures, most notably the DEC Alpha, which at the time was considered a serious rival to the Pentium for mainstream performance computing.

1985 — November 1985: Microsoft ships Windows 1.0 — 1986 — 1987 — September 1987: Hilary Duff is born — 1988 — December 1987: Microsoft releases Windows 2.0 — 1989 — 1990


Network Setup
Network Settings:
Setup will install Windows support for the following network(s) on your computer:
Microsoft Windows Network (version 3.11)
Networks...
You can share your files and printers with others.
Sharing...
Network Drivers:
Remote Access Service [NDIS3]
Microsoft NetBEUI
Drivers...
OK
Cancel
Help
Sharing
I want to be able to give others access to my files.
Run 'File Manager' to share your files with others.
I want to be able to allow others to print to my printer(s).
Run 'Print Manager' to share your printer(s) with others.
OK
Cancel
Help
Program Manager

WINDOWS FOR WORKGROUPS (3.11)

Microsoft did one better on Windows 3.1 with Windows for Workgroups, the first version of Windows to introduce relatively simple file and print sharing without the need for third-party software, cementing Windows as a true office operating system. Note WfW lacked native TCP/IP support, as the Internet (and its native protocol) weren't of concern to the mass market yet. 286 support is totally cut off in this revision as more components of the OS are migrated to a dedicated 32-bit architecture. (No 386? No Windows for Workgroups for you!)

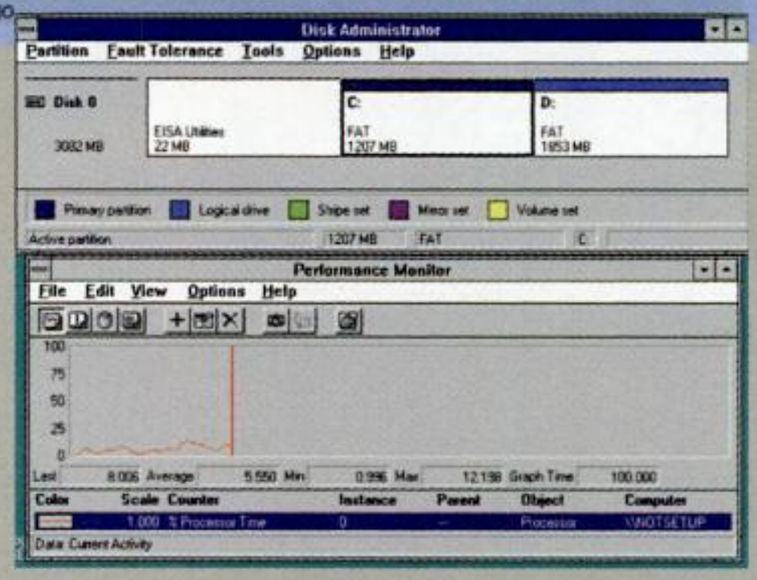

Welcome
Welcome to Windows NT
Did you know...
To add a program to your Start menu, you can drag the program's icon to the Start button.
What's New
Help Contents
Next Tip
Show this Welcome Screen next time you start Windows NT
Close

WINDOWS NT 4.0

NT 3.x was designed to look like Windows 3.x, but the Windows 95 graphical shell was actually designed first for NT—Windows 95 simply beat NT 4.0 to market, so NT 4 looks like the "copycat." This operating system was primarily intended for workstation use, although some opportunities for mirth and merriment were provided courtesy of DirectX 3. Hardware driver support, which had been a problem for NT since the beginning, continued with this version. Even though NT 4 has the Win95 look and feel, the control panel remained a frightening place for novices—it was just one long list of operating system services, sans the handy and helpful Device Manager.

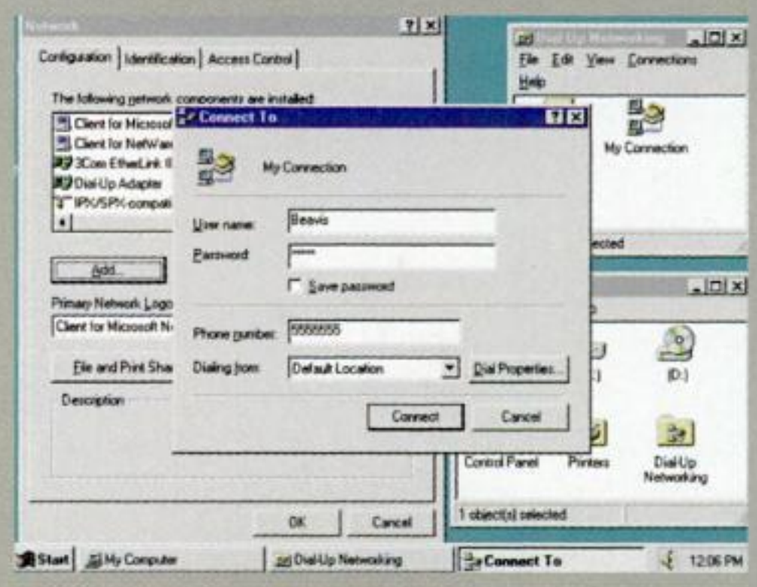
WINDOWS NT 3.51

Because of NT's hefty system requirements for a personal operating system (at a time when memory cost about $100 per MB, NT 3.5 required 12MB), NT 3.5's advances were overlooked by all but a select group of workstation users and server jockeys. Some key components of XP's Administrative Tools—notably the disk partitioning tool and the performance monitor—were present in a form XP users would recognize as early as NT 3.5. Microsoft added support for the PowerPC in this version because Intel still didn't have a lock on the desktop CPU market.



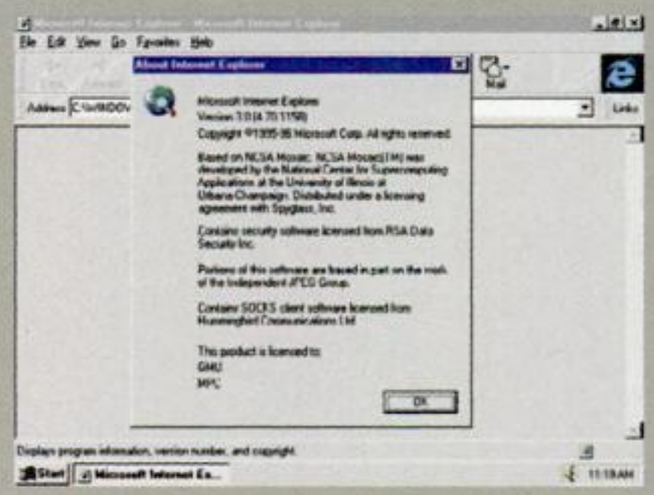
WINDOWS 95

The promise of the first decade of development was finally fulfilled with Windows 95, which combined backward-compatibility with DOS and Windows 3.x applications with an icon-adorned Desktop, an application dock, and an integrated TCP/IP stack. At long last, the 8.3-character filename limit was gone. Plug-and-play hardware detection made its first appearance, but it didn't really work very well. Nevertheless, the Start menu and Taskbar finally exposed Windows' multitasking capabilities to all users, and the first modern version of Windows was born. After the DirectX gaming libraries were added to Win95, the OS replaced DOS as the premier PC gaming platform.

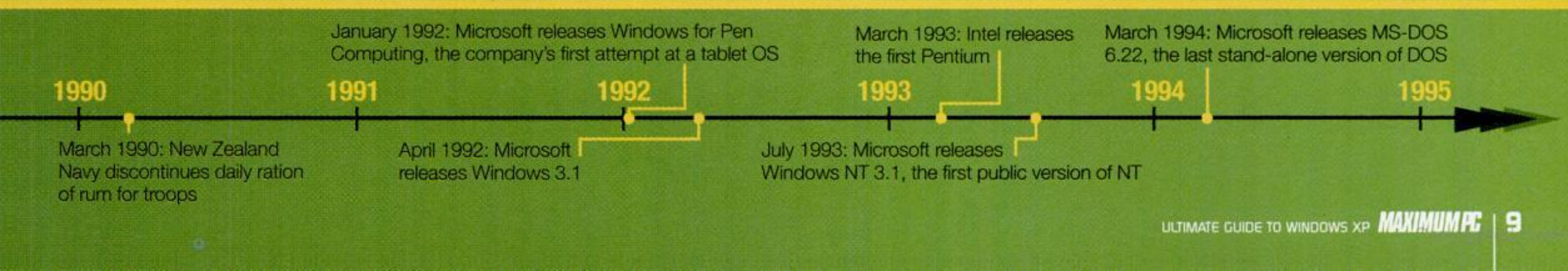


WINDOWS 95 OSR2

Before Service Packs, there were OSRs (OEM Service Releases), and OSR2 was the first time Microsoft had to scramble to catch up to the rest of the PC industry. The three key improvements in OSR2 were the introduction of the FAT32 filesystem (which finally enabled hard drive partitions of more than 2GB), *Internet Explorer 3.0*, and the first real attempt at USB support.



Nobody would mistake it for the basically painless plug-and-play of XP, but at least hot-plugging was a hypothetical possibility now for Win95 users. Unlike modern service packs, OSR2 was difficult to get unless you bought a new PC—as the name implies, it was up to PC builders to supply it to customers.


1990
1991
1992
1993
1994
1995
March 1990: New Zealand Navy discontinues daily ration of rum for troops
January 1992: Microsoft releases Windows for Pen Computing, the company's first attempt at a tablet OS
April 1992: Microsoft releases Windows 3.1
March 1993: Intel releases the first Pentium
July 1993: Microsoft releases Windows NT 3.1, the first public version of NT
March 1994: Microsoft releases MS-DOS 6.22, the last stand-alone version of DOS

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E-mail Accounts	1,000 IMAP or POP3	200 POP3	1,000 POP3
Mailbox Size	2,000 MB	2,000 MB	10 MB
Website Builder	12 pages	✓	freeware
Photo Gallery	✓	✓	✓
Dynamic Web Content	✓	✓	—
Web Statistics	✓	✓	✓
Chat Channels	✓	—	✓
Database	25 MySQL (Linux)	MySQL support	25 MySQL (Linux)
Search Engine Tools	✓	Extra charge applies	Extra charge applies
PHP Support (Linux)	✓	✓	✓
Perl Support (Linux)	✓	✓	✓
Software suite ($600 value)	✓	—	—
90-day Money Back Guarantee	✓	—	—
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Windows Turns 20!

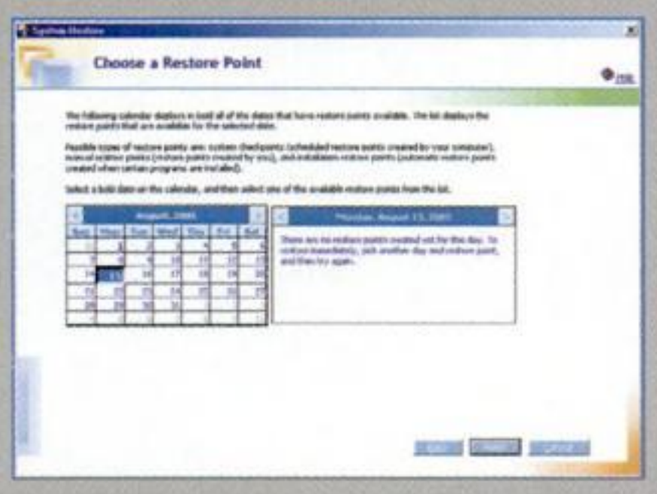
1995 to 2005

WINDOWS 98

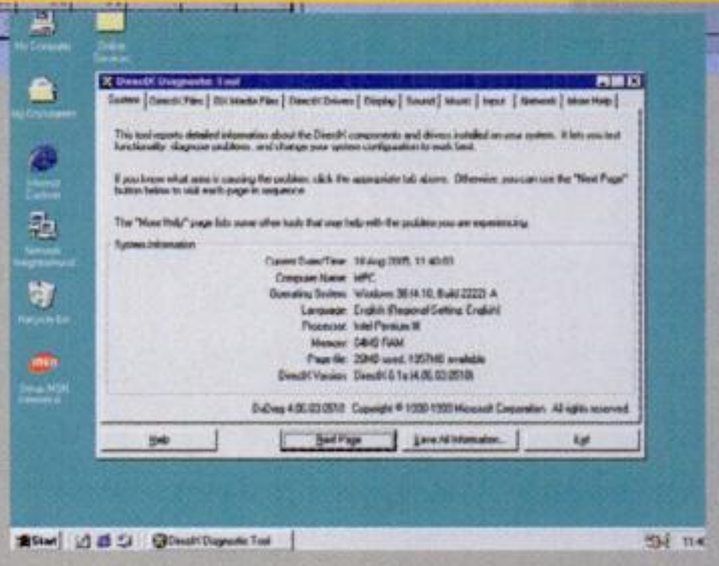
The last great leap in DOS-based Windows, Win98 introduced the first working plug-and-play system, complete with stable USB support. Microsoft bundled and even partially integrated *Internet Explorer 4* into the OS. The ability to call on HTML, JavaScript, and ActiveX code from any app also aided software development. You could embed an *IE* window in just about any app. Windows 98 shipped with support for DirectX 5, cementing Windows' role as a gaming platform.

WINDOWS MILLENNIUM EDITION (ME)

The less said about this dog, the better. Windows ME was an ill-conceived and ill-executed attempt to juice more life out of DOS-based Windows. In reality, ME did little but cause serious PC users to grind their teeth. DOS was still lurking in the wings, although MS went to so much trouble to hide it that some applications wouldn't work properly. *Windows Media Player* was tightly integrated with Windows in much the same way *Internet Explorer* was in Win98. The one high point of ME was System Restore, which would let you roll back a broken OS to a pre-saved restore point.

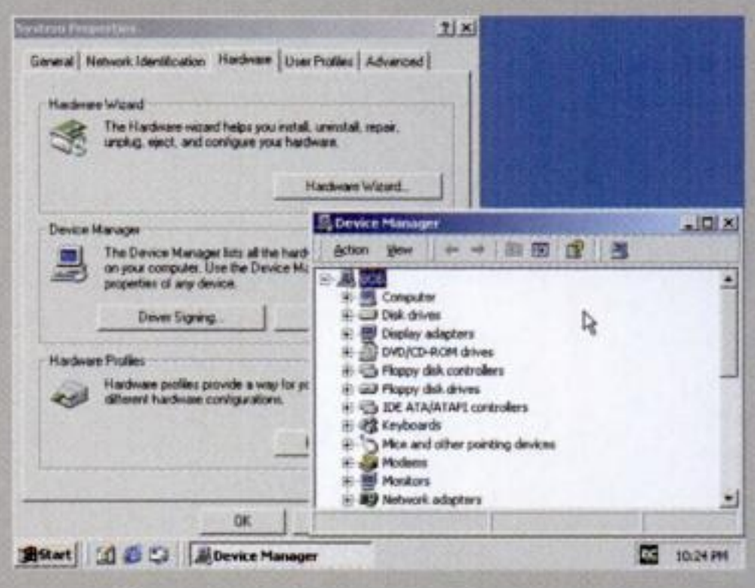


WINDOWS NT 4.0



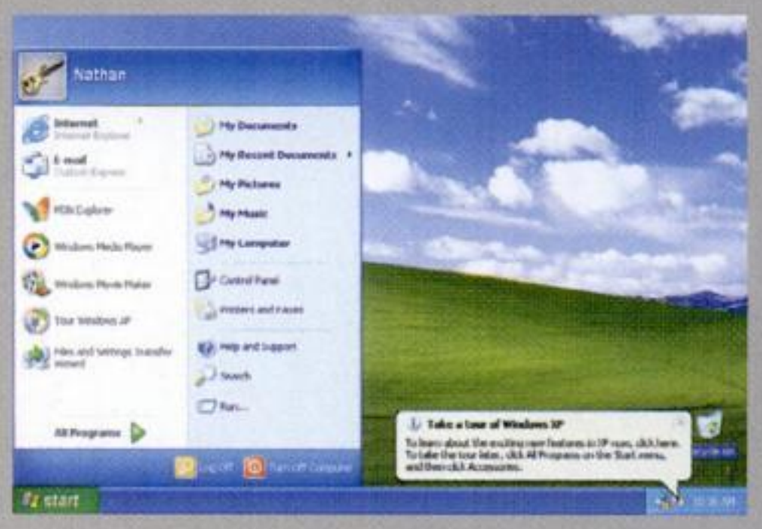
Despite its strengths, Windows 98 had serious stability problems out of the gate, so less than a year after its launch, the Second Edition arrived to replace it. Win98SE is generally considered the pinnacle of the DOS-based Windows implementation. Driver support continued to improve, including a virtual end to pesky IRQ conflicts. Internet Connection Sharing made Windows attractive to the budding broadband market. Win98SE became the de facto gamer's operating system as DirectX came of age and many game developers refused to support NT-based operating systems.

WINDOWS 2000

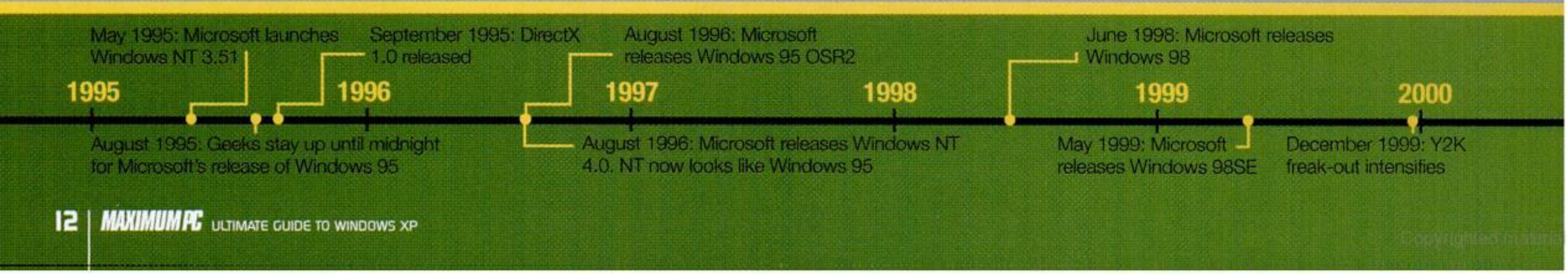


Win2000 represents the courtship of the super-stable NT kernel with the ease-of-use of Windows 98. Windows 2000 was the perfect practice run for Windows XP, and it was the first real delivery of NT's promise—a more stable, more secure platform for Windows applications than DOS-based Windows could ever hope to be. Win98SE power users felt right at home running the OS, but Microsoft believed that Windows 2000 was still too resource-hungry and difficult to maintain for the home audience. As a result, Windows 2000 was targeted and priced for the corporate and workstation crowd.

WINDOWS XP



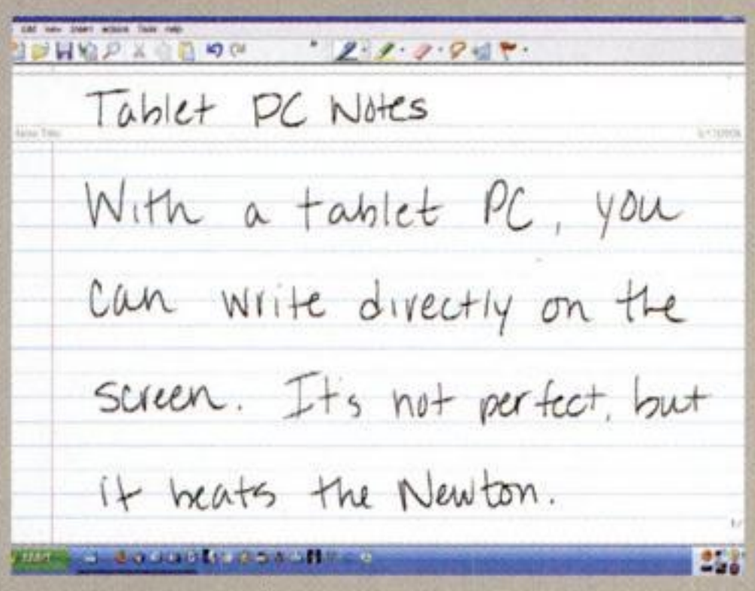
Ding dong, the DOS is gone! With Windows XP, the NT kernel went prime time. Windows XP included a modest retrofit of the Win95 interface with Luna. The Luna interface made the machine even more accessible to new PC users by presenting commonly needed and used applications, such as the default web browser, in the Start Menu. WinXP made setting up multiple user accounts and workspaces simpler than it was in Windows 2000 (and more meaningful than it was in the low-security DOS versions). In late 2004, Service Pack 2 gave XP users a host of security upgrades, including a configurable OS firewall and OS-level hooks into most popular virus scanners.


May 1995: Microsoft launches Windows NT 3.51
September 1995: DirectX 1.0 released
August 1996: Microsoft releases Windows 95 OSR2
June 1998: Microsoft releases Windows 98
1995
1996
1997
1998
1999
2000
August 1995: Geeks stay up until midnight for Microsoft's release of Windows 95
August 1996: Microsoft releases Windows NT 4.0. NT now looks like Windows 95
May 1999: Microsoft releases Windows 98SE
December 1999: Y2K freak-out intensifies

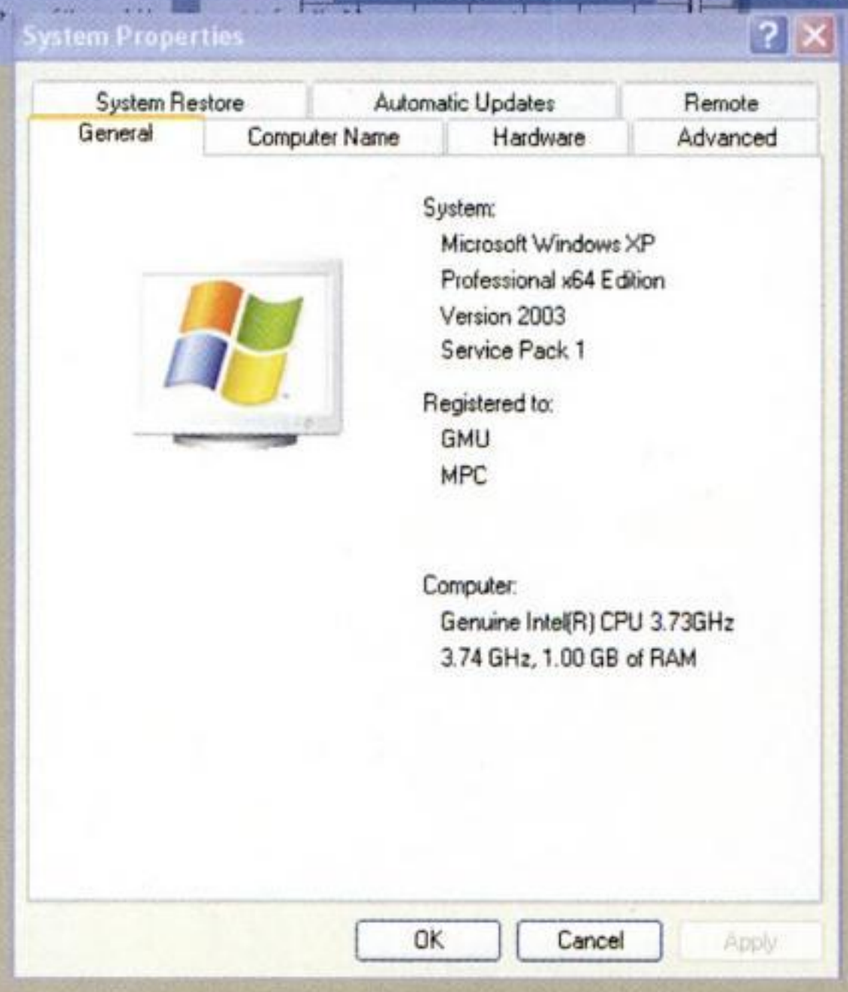
WINDOWS XP MEDIA CENTER EDITION

The industry has been talking about "living room convergence PCs" for a decade, and Windows XP MCE represents Microsoft's incursion into that space. The XP desktop is still present, but MCE also includes a slick, TiVo-esque front-end for all the music and movies you can cram into a media machine—all driven by remote control. While the first versions had serious warts—fast-forwarding through a TV program could crash the shell—later revisions fixed many of the flaws. Still, MCE isn't as compelling as other products that aren't crippled by digital rights-management technology.

WINDOWS XP TABLET EDITION

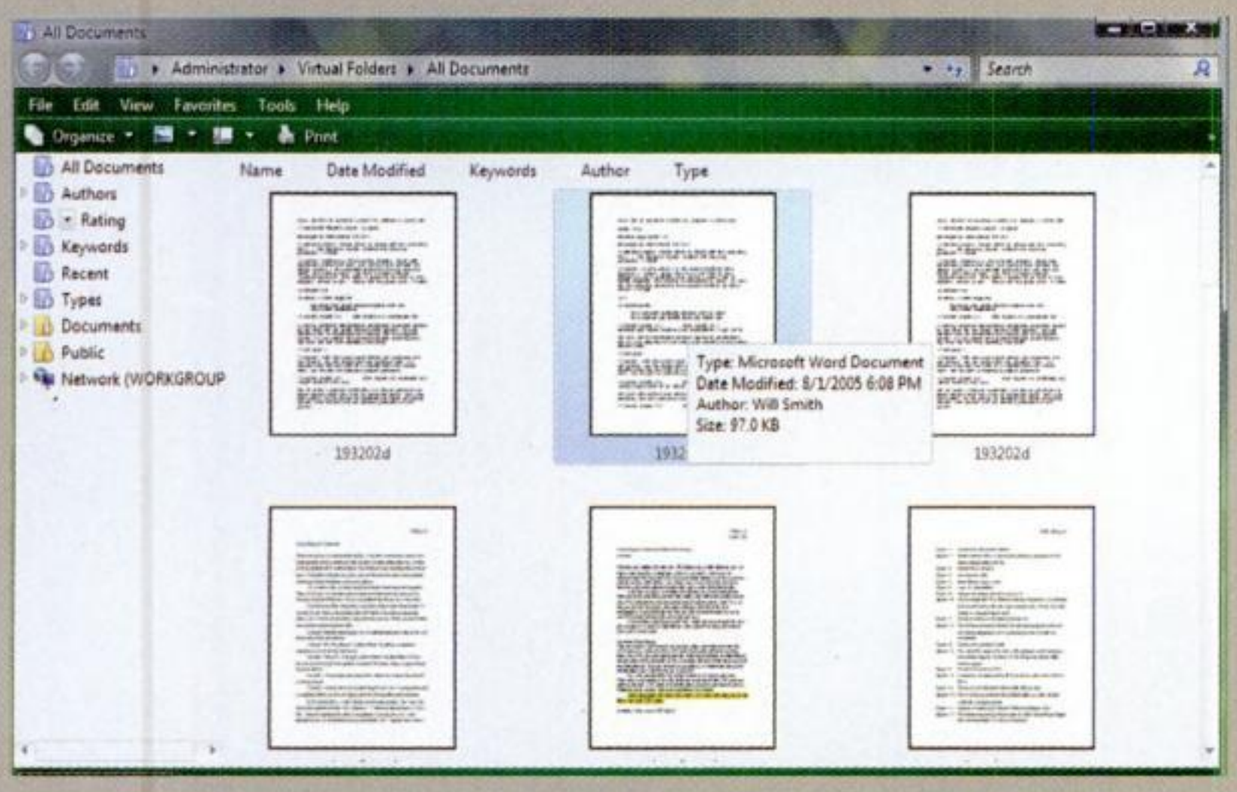


Microsoft has tried to bring pen-based computing to the masses since the early 1990s, when a Windows 3.1-based pen-based OS was released. XP Tablet is a much more polished, ready-for-prime-time concept. Like MCE, Tablet is a full-fledged implementation of XP with extra bells and whistles, such as speech and handwriting recognition, as well as the Journal, an electric notepad that's perfect for taking notes.



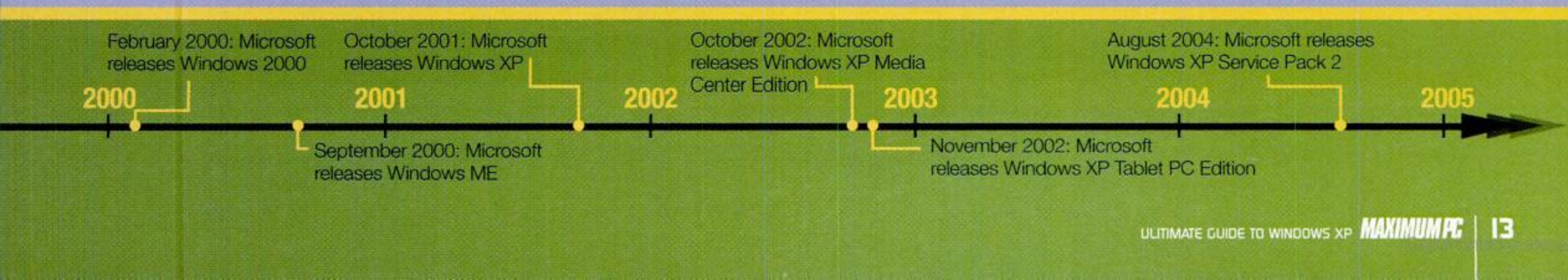
WINDOWS XP 64-BIT EDITION

Users who bought into Intel's and AMD's 64-bit architectures had to wait years for Microsoft to offer desktop OS support, but it finally arrived in 2005 in the form of XP 64-Bit Edition, the 64-bit offshoot of XP Professional. What that means remains to be seen, as 64-bit Windows has yet to provide a killer app. Although it's an official product, 64-bit XP still has a specialized audience as of this writing. A number of customary Windows features, including System Restore, are not present in the new OS. But to be on the cutting edge with the hottest iron, XP 64 is where it's at.



WINDOWS VISTA

Code-named Longhorn, Vista should be at least as much a leap in look and feel for XP users as Win95 was to the Win3.1 crowd. The new Aero interface emphasizes 3D interactivity and smooth, vector-based interface design, and the core of the operating system is built to tie in heavily with Microsoft's .NET framework, including a wave of new programming APIs (which are expected to be ported back to XP users as well). If you think Longhorn/Vista is taking a long time to reach the market, consider that it took Microsoft well over a decade to make NT its primary desktop operating system. Surely, an extra year or two for Vista won't hurt anybody... MPC


2000
2001
2002
2003
2004
2005
February 2000: Microsoft releases Windows 2000
September 2000: Microsoft releases Windows ME
October 2001: Microsoft releases Windows XP
October 2002: Microsoft releases Windows XP Media Center Edition
November 2002: Microsoft releases Windows XP Tablet PC Edition
August 2004: Microsoft releases Windows XP Service Pack 2

MAXIMUM PC's Guide to
64 Bit
Fun Chip Facts!
• The first chip to support X86 x64 was the AMD Opteron
• The Intel Itanium actually uses a different 64-bit scheme, IA64
• The first Intel chip to support X86 x64 was the Pentium 4 660
• Apple claims that the G5 was really the first 64-bit desktop processor
• 64-bits refers to both the size of the CPU registers and the memory addressing space
• The Linux kernel has supported AMD64 since shortly after the launch of the Opteron
• The rhinoceros is closely related to the tapir
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WS!

The whole story on the arrival of 64-bit computing and what it means for PC power users

Windows XP Professional x64 Edition heralds the biggest change to Microsoft Windows in a decade. The move from a 32-bit to a 64-bit operating system with native applications and device drivers is reminiscent of 1995's replacement of 16-bit Windows 3.1 with 32-bit Windows 95. Yet history never repeats itself exactly. In 1995, 32-bit processors had already been in widespread use for six years. The move to 64-bit operating systems has taken far less time: the first 64-bit CPUs based on x86 architecture will actually taste the fruits of 64-bit processing. Of course, early adopters of Windows XP Professional x64 Edition can expect struggles with device drivers and incompatible applications.

Before you dive into 64-bit computing, know what you're getting into, and what you'll get out of it. Maximum PC has the answers you need to prep yourself for the adventure of 64-bit computing.

—MARK SOPER

Questions about the Soft Stuff

Which versions of Windows support 64-bit computing?

Currently, Windows XP Professional x64 Edition is the only 64-bit version of Windows available for desktop computers. Other x64 editions of Windows include Windows Server 2003, Standard x64 Edition; Windows Server 2003, Enterprise x64 Edition; and Windows Server 2003, Datacenter x64 Edition. Still other 64-bit versions of Windows, such as the now-discontinued Windows XP 64-bit Edition 2003 and the current Windows Server 2003, Enterprise Edition with SP1 for Itanium-based systems, are designed strictly for the Intel Itanium CPU, which uses a completely different architecture than x64-compatible processors.

Where can I get the 64-bit version of Windows?

The x64 editions of Windows Server 2003 became available in April 2005. Trial versions of Standard and Enterprise Editions are available at **www.microsoft.com/windowsserver2003/evaluation/trial/default.mspx**. Contact OEM vendors for evaluation versions of the Datacenter Edition (you'll find a list at **www.microsoft.com/windowsserver2003/partners/oems/64bitoems.mspx**).

Windows XP Professional x64 Edition became available in May 2005. Microsoft offers a preview kit on CD and downloadable trial software through the Microsoft Windows XP 64-bit website. For more information, see **www.microsoft.com/windowsxp/64bit/evaluation/default.mspx**. Windows XP Professional x64 Edition, unlike its 32-bit predecessor, will not be available at retail. It will be sold in "OEM" and system builder versions only. Thus, both off-the-shelf system purchasers and "white box" custom builders will offer it. It's possible to buy system-builder versions of Windows bundled with your choice of hardware from some vendors, so you should be able to "roll your own" x64 Windows box.

Can I trade my current 32-bit version of Windows for the 64-bit version?

For a brief time Microsoft did allow users of Windows XP Professional to trade in their OS for a copy of Windows XP Professional x64 Edition. Unfortunately, the window (sorry) on this offer closed last year.

What are the differences between the Windows versions?

Windows XP Professional x64 Edition's user interface is based on Windows XP Professional. Windows XP Professional x64 Edition is designed for 64-bit desktop processors that use the AMD64/EM64T architecture; its underlying design is based on Windows Server 2003 SP1. Unlike the 32-bit version of Windows XP Professional, the x64 version supports up to two processors and 128GB of RAM.

Can I run my current 32-bit software on the 64-bit version of Windows?

In many cases, you can run your 32-bit software on the new OS. Windows XP Professional x64 Edition (x64 Windows) can run 32-bit applications, but not 16-bit or MS-DOS applications. 32-bit applications that use 16-bit installers, however, will not install. The only 16-bit installers that x64 Windows supports are 16-bit Microsoft ACME Setup versions 2.6, 3.0, 3.01, and 3.1, and InstallShield versions 5.x. If you see a "Setup.exe is not a valid Win32 application" error when you try to install a 32-bit program, you'll need to hoof it to the company's website to obtain a software update (if one is available) before you can install the program. Applications that use 32-bit device drivers, including most 32-bit antivirus programs and some 32-bit CD- and DVD-mastering programs, will not work correctly. As an alternative, you can use x64 Windows' own CD-burning feature with a supported recorder. Some web resources to check for user reports of application compatibility include **www.winsupersite.com/reviews/windowsxp_x64_preview2.asp** and **www.planetamd64.com/lofiversion/index.php/t4103.html**. Check with your software vendors for patches and updates for existing 32-bit applications.

Before you assume that your 32-bit program won't work with the x64 Edition, check the installation location. The long-time default location of C:\Program Files is now used only for 64-bit applications; 32-bit applications need to use C:\Program Files (x86). In our tests of a smattering of 32-bit applications, x64 Windows automatically used C:\Program Files (x86) as the installation location. You can specify it

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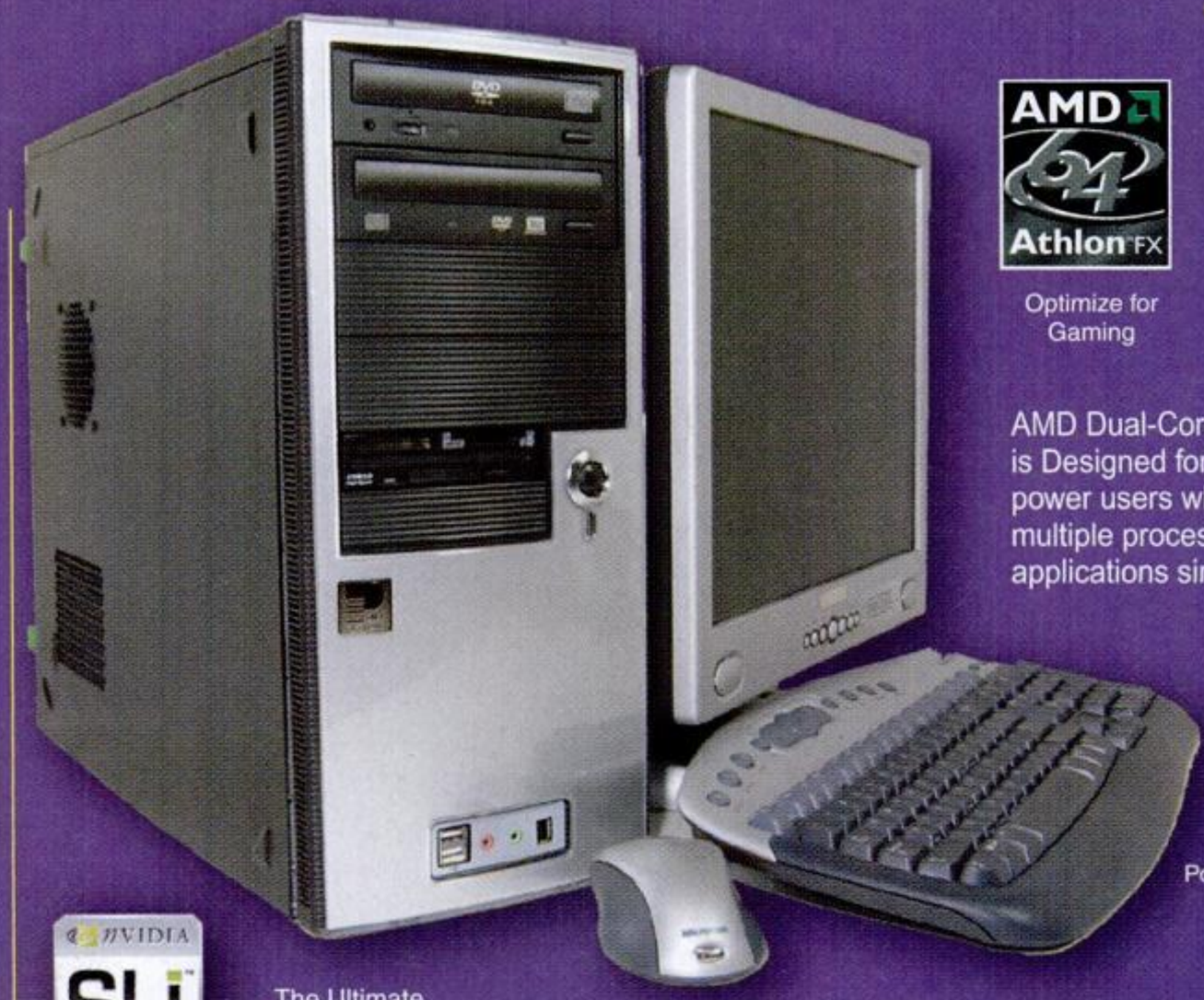

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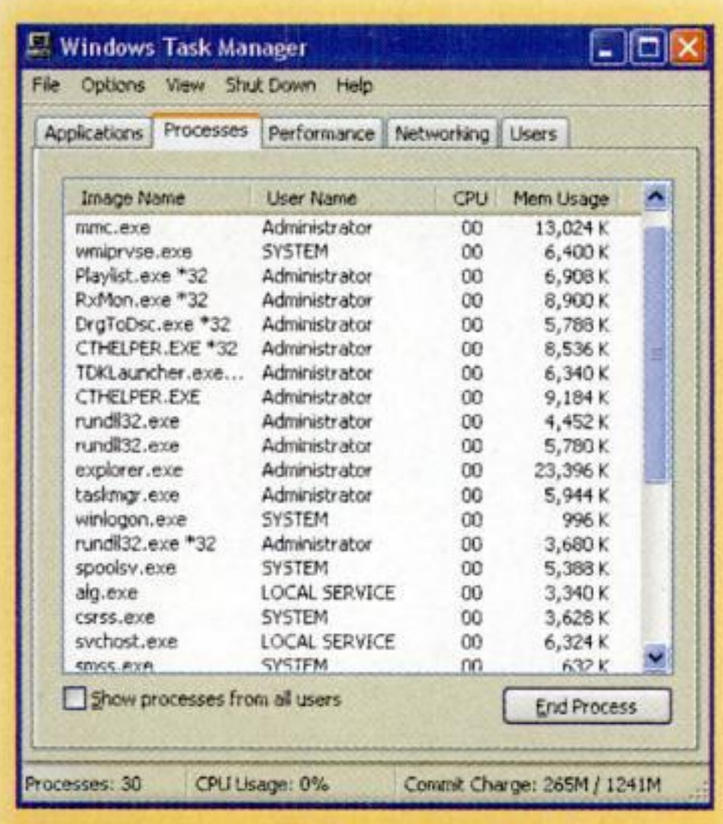
yourself if you need to.

If you're wondering about 32-bit games, don't worry. The most popular 3D games—from *Half-Life 2* to *Doom 3* and *Far Cry*—work fine on x64 Windows. As with Windows XP, x64 Windows offers a Program Compatibility Wizard (PCW) to help iron out any problems older 32-bit software might have. The PCW even offers a Windows XP setting designed to mimic the 32-bit version of Windows XP.

To compensate for the paucity of 64-bit plugins, x64 Windows includes both a 32-bit and a 64-bit version of *Internet Explorer 6*. Use the 32-bit version to surf sites that have content you can't access because of plugin or other issues.


Windows Task Manager
File Options View Shut Down Help
Applications Processes Performance Networking Users
Image Name User Name CPU Mem Usage
mmc.exe Administrator 00 13,024 K
wmiprvse.exe SYSTEM 00 6,400 K
Playlist.exe *32 Administrator 00 6,908 K
RxMon.exe *32 Administrator 00 8,900 K
DrgToDsc.exe *32 Administrator 00 5,788 K
CTHELPER.EXE *32 Administrator 00 8,536 K
TDKLauncher.exe... Administrator 00 6,340 K
CTHELPER.EXE Administrator 00 9,184 K
rundll32.exe Administrator 00 4,452 K
rundll32.exe Administrator 00 5,780 K
explorer.exe Administrator 00 23,396 K
taskmgr.exe Administrator 00 5,944 K
winlogon.exe SYSTEM 00 996 K
rundll32.exe *32 Administrator 00 3,680 K
spoolsv.exe SYSTEM 00 5,388 K
alg.exe LOCAL SERVICE 00 3,340 K
csrss.exe SYSTEM 00 3,628 K
svchost.exe LOCAL SERVICE 00 6,324 K
Show processes from all users
End Process
Processes: 30 CPU Usage: 0% Commit Charge: 265M / 1241M

The Processes tab is almost identical to that in the 32-bit version, but it indicates 32-bit processes with *32.

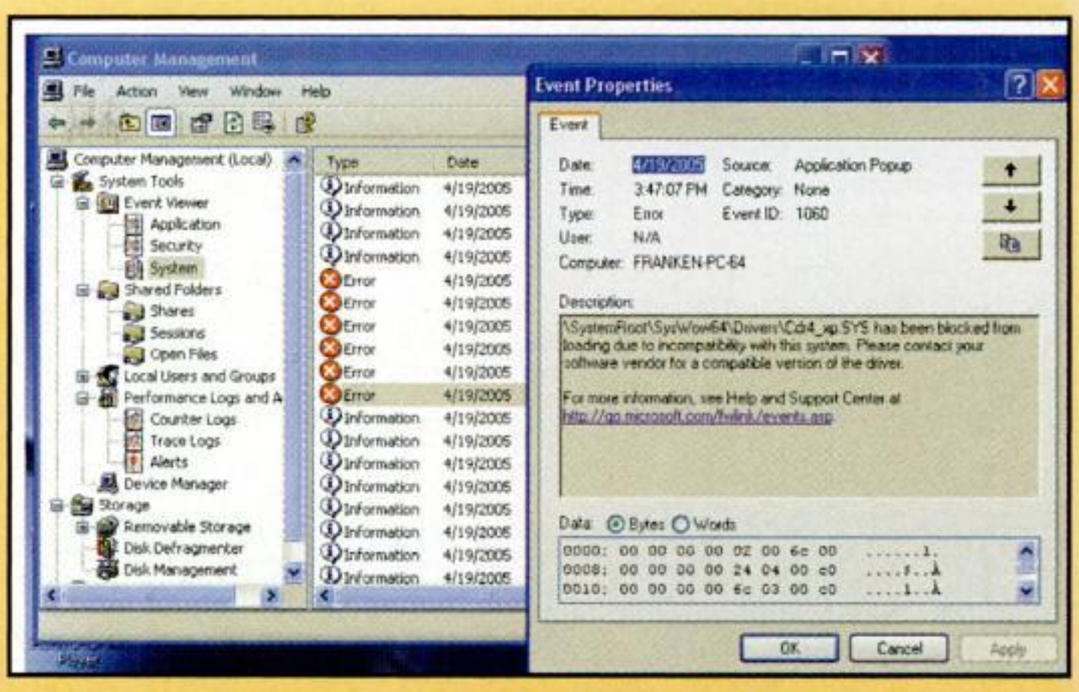
Q Is there a performance hit when running 32-bit software on the 64-bit version of Windows?

No. Although x64 Windows uses a technology called Windows on Windows 64 (WoW64) to run 32-bit applications, the microarchitecture of x64-compatible processors handles 32-bit applications natively. Thus, the speed of 32-bit programs on an x64 system using a 64-bit OS is similar to the speed at which the same programs would run on the same system using a 32-bit OS. Each 32-bit program is granted either 4GB or 2GB of virtual address space, depending on the design of the software. Software that can address up to 4GB of virtual address space might perform better when handling large amounts of data than programs that address only 2GB.

Q What kind of benefits do I get from running 64-bit?

The x64 version of Windows XP supports up to 128GB of physical memory and up to 8TB of address space for each 64-bit process. These allowances are far larger than 32-bit Windows' (4GB physical, 2GB- to 3GB address space for each application). Larger physical-memory and address-space sizes enable 64-bit applications to support more users, reduce paging to and from the hard drive to deliver better performance, and accommodate larger amounts of data for memory-intensive applications such as video editing and scientific and financial modeling. A 32-bit application running under a 64-bit operating system can access 4GB of memory addresses, as opposed to the 2GB- to 3GB of memory addresses with current 32-bit operating systems.

All things considered, you can expect to see a performance boost in almost every case with 64-bit applications compared with equivalent 32-bit applications. Again, native 32-bit applications run at about the same speed on a 64-bit processor as they do on a 32-bit chip.



If you see errors when you try to run a 32-bit program, check the System Log and Application Log to determine which program(s) are not compatible.

Q Which applications support 64-bit mode today, and who's planning to support it later?

Very few native 64-bit applications were available as of mid-April 2005. Register at PlanetAMD64 (**www.planetAMD64.com**) to find links to downloadable 64-bit applications and 64-bit device drivers. Another source is the Native 64-bit Software page at **www.3dvelocity.com/articles/win64compatibility/win64nativesoftlist.htm**. Microsoft expects most major software vendors to support 64-bit modes after x64 Windows begins shipping. For information on major software vendors already providing x64-compatible software, check out our "64-bit Driver and Application Web Watch" on page 21.

Q What hardware do I need to run the 64-bit version of Windows?

Windows XP Professional x64 Edition requires one of the following processors: AMD's Athlon 64, Athlon 64 FX, Athlon 64 X2 (dual core), or Opteron. If you prefer Intel CPUs, you'll need a Xeon with Intel Extended Memory Technology (EM64T) support, 6XX-series Pentium 4 (all of these have EM64T support), Pentium 4 Extreme Edition with EM64T support, or any Pentium D (dual core, code-named Smithfield). The system also needs a minimum of 256MB of RAM and 1.5GB of available hard disk space. But don't expect to be impressed running the 64-bit version of Windows using these minimum specs. We recommend 1GB or more of RAM.

Q I heard one of the big problems will be driver support. Is this still true?

Driver support is improving, but it's still a major issue. Although drivers for many core components are included with Windows, drivers for some popular chipsets might not be on the Windows installation CD. To determine if your core hardware components (motherboard chipset; videocard; add-on cards, such as network, sound, Serial ATA, dial-up modem; and others) are supported, go to **www.amd.com** and type "AMD64 device driver support for Windows" in the search box in the upper-right corner. This will take you to a page that lists drivers included in Windows XP Professional x64 Edition and also to links where you can download additional drivers. Another useful list is maintained by CDRinfo at **www.cdrinfo.com/forum/tm.asp?m=106657&mpage=1&#106817**. This page also contains links to downloadable drivers. If your hardware is not supported by the Windows CD, check

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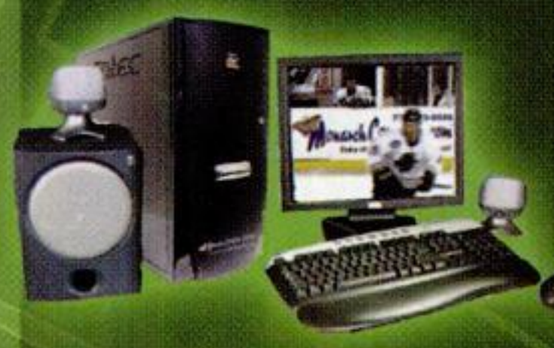

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your hardware vendors' websites for drivers, and consult our handy "64-bit Driver and Application Watch" on page 21. Alternatively, you could use a search engine to locate drivers. Searching terms such as "x64," "AMD64," or "x86-64 Windows driver download," in combination with the name of the product or chipset, will help you locate drivers. Although Windows XP Professional x64 Edition contains drivers for many older products, the lack of support for recent printers and scanners and other current products continues to be a major weakness.

Questions about the Hard Stuff

Q Who first manufactured 64-bit PC processors?

Apple maintains that its G5 PowerPC processor, introduced in July 2003, was the first 64-bit desktop PC processor. AMD's Opteron, however, was introduced in April 2003; and despite being developed as a workstation processor, the Opteron has been used in a number of desktop systems—some of which were released as early as June 2003. Further muddying the waters, DEC (later acquired by Compaq) introduced its 64-bit Alpha CPU back in 1992. The Alpha was used in both server and workstation/high-end desktop roles. Although a 64-bit version of Windows NT was planned for Alpha, the project was killed in 1999. Today, various 64-bit Linux distros are available for the Alpha.

Q Who came up with 64-bit on x86 architecture?

AMD was the first to develop a 64-bit extension to the x86 architecture (the foundation of Intel's 8088 through Pentium 4 microprocessors, as well as AMD's Athlon-class processors). AMD made its technical documentation available to programmers in August 2000 in order to foster the development of AMD64-compatible software and hardware. Intel's EM64T architecture was developed from this information, and as a result, is almost an exact copy of AMD64—the only differences being the features needed for Intel processor-specific functions, such as Hyper-Threading (HT) technology and SSE3 instructions. Any 64-bit operating systems and applications made for x64 hardware will work with either processor architecture.

Q OK, what is AMD64, and how does it differ from the current x86 architecture?

Compared with x86-32, AMD64 provides twice the number of general-purpose registers, twice the number of XMM registers used for SSE and SSE2, and a much larger physical and virtual memory address space.

AMD64 can run in two modes: 64-bit mode, which supports native 64-bit operating systems and applications in 64-bit mode, and Compatibility Mode, which supports existing 32-bit operating systems and applications. AMD64's 64-bit/Compatibility modes are also referred to as Long Mode, to distinguish them from Legacy Mode, the family name for 32-bit and 16-bit protected, virtual 8086, and real-mode operations performed by older 32-bit and 16-bit processors. AMD64 also supports the NX (No Execute) bit in hardware, a feature that helps prevent the buffer-overflow attacks at the heart of so many Windows security "issues."

ARCHITECTURAL DETAILS	x86-32 (aka IA-32)	AMD64
GENERAL-PURPOSE REGISTERS	8	16
REGISTER SIZE	32 bits	64 bits
128-BIT XMM REGISTERS (SSE, SSE2)	8	16
PHYSICAL MEMORY ADDRESS SPACE	4GB in Windows XP (some operating systems support up to 64GB through address extensions)	1TB (Windows XP Professional x64 Edition is limited to 128GB)
VIRTUAL MEMORY ADDRESS SPACE	4GB	256TB

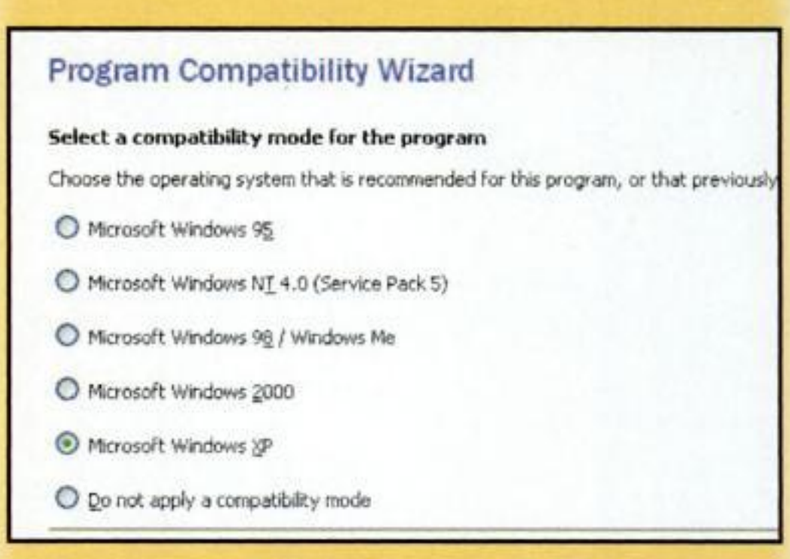
Here's what got beefed up in the transition from the current x86 architecture to AMD64.

Q What is the difference between x86-64, AMD64, and EM64T?

AMD originally referred to its 64-bit processor extensions as x86-64, but the company changed the name to AMD64 in 2003. EM64T is Intel's implementation of AMD64; for practical purposes, both extensions are identical.

Q Wait a minute: My RAM is already 128-bit, and I thought CPUs already worked in 64-bit. What gives?

Processors such as the Intel Pentium family and AMD Athlon family are designed to use 64-bit memory modules, although the processor's internal registers are only 32 bits wide. The x64-compatible processor families have 64-bit registers. The internal register size is used to indicate the processor type. The Intel Pentium and AMD Athlon processor families have 64-bit data buses (the processor's connection to memory) to improve performance over earlier 32-bit processors—such as the Intel 386 and 486 procs—which had only 32-bit data buses. Many recent systems have dual-channel memory bus designs. These systems use a matched pair of 64-bit memory modules (same size, speed, and latency) to improve memory performance. Although such systems use a pair of 64-bit modules, it's a misnomer to label the memory "128-bit," because the processor still uses a 64-bit data bus to communicate with the RAM.


Program Compatibility Wizard
Select a compatibility mode for the program
Choose the operating system that is recommended for this program, or that previously
Microsoft Windows 95
Microsoft Windows NT 4.0 (Service Pack 5)
Microsoft Windows 98 / Windows Me
Microsoft Windows 2000
Microsoft Windows XP
Do not apply a compatibility mode

Windows XP Professional x64 Edition's Program Compatibility Wizard includes Windows XP (32-bit versions) as a compatibility setting.

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Q I know that the more RAM, the merrier. But are there limits other than the 128GB addressable by the 64-bit version of Windows?

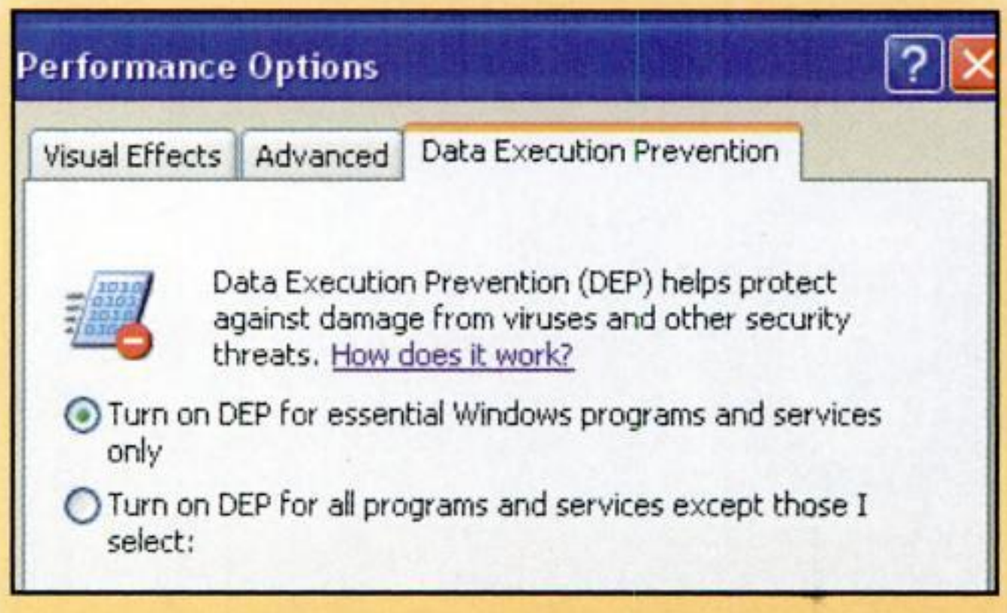
The amount of RAM you can use is actually controlled by your computer's motherboard, processor, and operating system. A number of recent Pentium 4 and AMD Athlon XP motherboards, for example, can address up to 4GB of memory. Most 32-bit Windows applications, however, can use only 2GB of memory; the remainder is used only by the operating system. Most current motherboards made for Athlon 64 and Athlon 64FX processors also accommodate up to 4GB of RAM. Some workstation motherboards made for the AMD Opteron, on the other hand, can accommodate up to 16GB of RAM. In either case, 64-bit operating systems and applications can access the entire amount of memory on such systems.

Q Is the EM64T and AMD64 compatible with IA64?

IA64 is the term used to describe the processor architecture of the Intel Itanium and Itanium 2 family of processors. Intel designed IA64 as a brand-new 64-bit processor architecture with only limited support for x86 applications (via a pokey emulation layer). By contrast, AMD64 and EM64T are based on the x86, and their microarchitecture is directly compatible with x86 instructions. When you search for 64-bit software for your x64 version of Windows and 64-bit processor, don't bother with IA64 applications—they won't work on your system.

Q I heard that x87 floating point, MMX, and 3DNow! will all go away with AMD64. What's the thinking behind this move?

The x87 floating-point architecture was originally used to support a separate 8087, 80287, 80387, or 487SX math-coprocessor chip; the functionality of the floating-point x87 is built into all Pentium-class and newer processors. CAD (computer-aided design) and spreadsheet programs used this chip to calculate high-precision math. The x87 stack-based architecture was difficult to code efficiently, so it's been replaced in the AMD64 architecture by what is called a "flat register file" with 16 entries. AMD64's use of SSE2 (Streaming SIMD Extensions 2) also permits 32-bit and 64-bit floating-point calculations. These are faster, have better throughput (up to twice as many calculations per clock cycle), and provide more accurate values than the x87 floating-point architecture. SSE2 also incorporates the functionality of the old MMX and 3DNow! instructions, so there was no need to include these features in AMD64 or EM64T 64-bit operations. Any 32-bit software that uses these types of instructions will work properly in AMD64 or EM64T's 32-bit mode. MPC


Performance Options
Visual Effects
Advanced
Data Execution Prevention
Data Execution Prevention (DEP) helps protect against damage from viruses and other security threats. How does it work?
Turn on DEP for essential Windows programs and services only
Turn on DEP for all programs and services except those I select:

AMD64- and EM64T-compatible processors include hardware support for Windows XP's new Data Execution Prevention (No Execute) feature.

The 64-bit Driver and Application Web Watch

Maximum PC's cheat sheet for tracking down 64-bit drivers

Your first stop should be the Planet AMD64 website at **www.planetAMD64.com** for news about 64-bit drivers and applications (you must register at the site to see driver and application downloads and to use some other site features).

If you can't find what you're looking for there, the following major hardware and chipset vendors have posted x64 drivers as of mid-April 2005 (this list is subject to the whims of the webmasters). Use these links if the drivers provided in Windows XP Professional x64 Edition do not support your system. And, of course, AMD's own website, as we mentioned before, has a heap of links as well.

ATI Technologies: www.ati.com (Radeon and FireGL product families)
Broadcom: www.broadcom.com (BCM57xx NetExtreme Ethernet family; use drivers listed for Windows Server 2003 AMD x86-64)
Hewlett-Packard: www.hp.com (drivers for certain ProLiant workstations)
HighPoint Technologies, Inc: www.highpoint-tech.com (selected SATA RocketRAID, and ATA RocketRAID, ATA Rocket product families)
Intel: www.intel.com (motherboards based on 9xx-series chipsets)
Logitech: www.wingmanteam.com (game controllers)
nVidia: www.nvidia.com (GeForce, TnT, Quadro desktop and workstation graphics chipset families, nForce family motherboard chipsets)
Realtek: www.realtek.com.tw (selected AC97 audio and Ethernet chipsets)
Silicon Image: www.siliconimage.com (Sil3114 SATA RAID chipset; look for 64-bit Windows drivers in the Support/Download Center)
Silicon Information Systems: www.sis.com (motherboard chipsets, integrated graphics, audio, network; use drivers listed for Windows XP 64-bit Edition)
ULi Electronics, Inc (formerly Acer Labs): www.uli.com.tw (chipset drivers are listed as for Server 2003 AMD64)
VIA Technologies: www.viatech.com or **www.viaarena.com** (most drivers are supplied with Windows XP Professional x64 Edition; use drivers on website listed for Windows XP 64-bit if needed)

The following major vendors are offering x64-compatible versions or patches for their applications (some are beta versions):

Cakewalk: www.cakewalk.com/x64/ (SONAR Producer Edition x64 Technology preview)
Computer Associates: www.ca.com (eTrust Antivirus 7.x)
IBM: www-306.ibm.com/software/data/db2/windows/x64.html (beta of IBM DB2 database)
Oracle: www.oracle.com (Oracle Database 10g 10.2 Release 2 in 32-bit and 64-bit versions for x64)
Persistence of Vision: www.povray.org/download/ (POVRay raytracer)
Sun Microsystems: http://java.sun.com (Java Runtime Edition 5.0 and Java Development Kit 5.0)

5 Reasons Not to buy Office

Microsoft Office isn't the only productivity suite in town

Most of us use our computer for more than just games (occasionally, at least): We write letters, memos, and keep daily logs. We send, receive, and store e-mail. We calculate numbers and we keep track of our finances. We edit and archive our photos. Those of us in business produce slideshows to present to prospective customers.

Bundle several of these application programs together and you have what's commonly known as an office suite. The best office suites share a common user interface—learn one component and you gain an understanding of how to use all the others.

Microsoft Office 2003 may be the most dominant suite in terms of market and mindshare—and it often comes bundled with a new PC. However, if you do not have a productivity suite yet, there are several viable alternatives out there that will run you quite a few less clams—some are even free! (And no, free doesn't mean they suck, either—read on.) Trial versions of several of the suites covered here are on the CD that came with this issue, so check 'em out!

BY RUSSELL **SHAW**

The Basis For Comparison

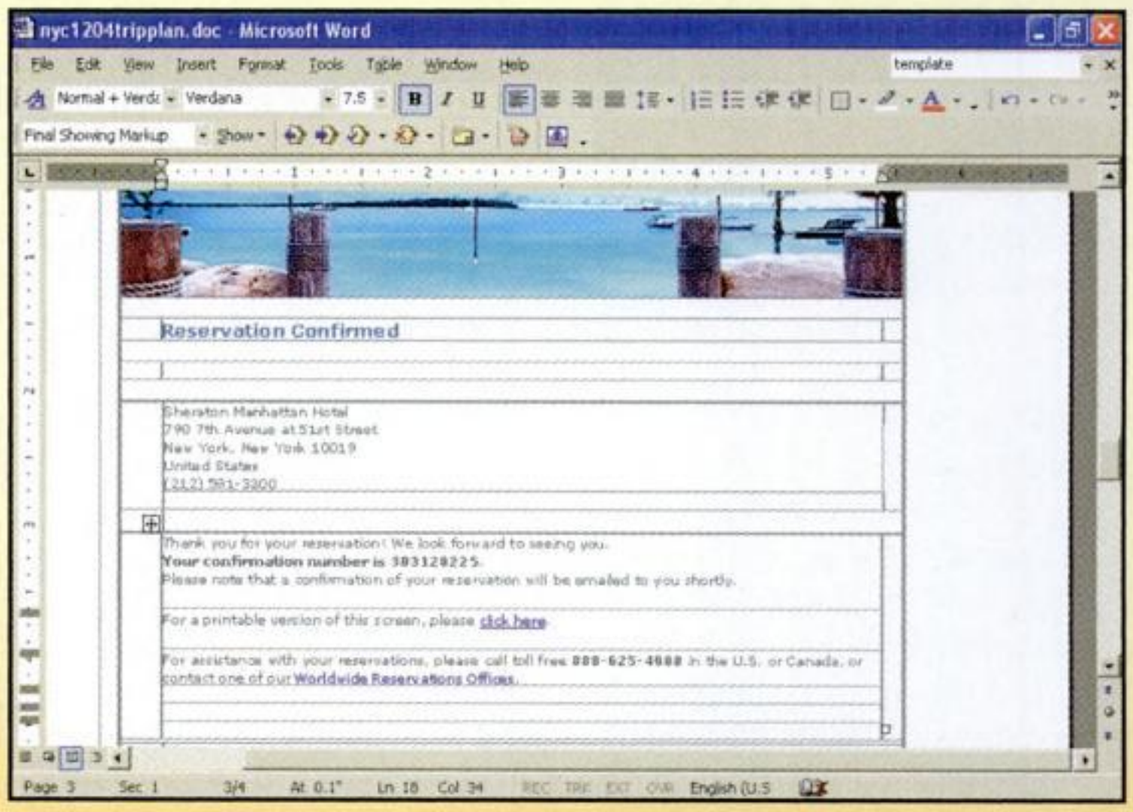
Microsoft Office Standard Edition 2003

FAMILIAR, FLEXIBLE, AND POWERFUL

For most of us, Microsoft Office is a bit of a comfortable old shoe. Studies have shown that more than 95 percent of PC owners use Microsoft Word as their word-processing tool.

Office also comes with Outlook 2003, a personal communications and contact manager; PowerPoint 2003, a presentation graphics tool; and Excel 2003, a spreadsheet tool used for calculations, complex financial analysis, and creating simple databases.

Word's popularity can only be partially attributed to Microsoft's marketing muscle; the program is a strong competitor in its own right. As part of the Microsoft family of products, Word's built-in cut-and-paste operations


nyc1204tripplan.doc - Microsoft Word
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Microsoft Word is by far the world's most popular word-processing program.

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Ability Office Version 4

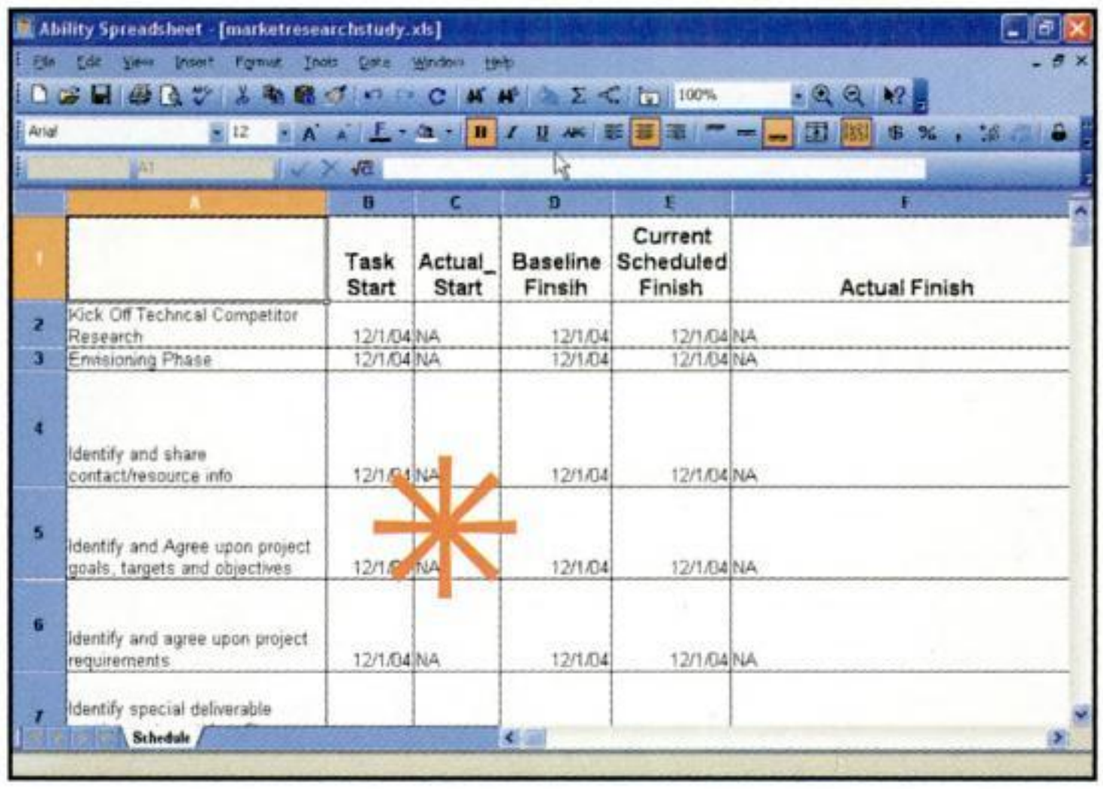
EASY AND POWERFUL

Ability Office is available in several versions, ranging in price from $44.99 for the Basic edition (word processor, spreadsheet, photo-editor, and photo-album) to $74.99 for the Professional edition (which adds both business-presentation and database programs).

Ability Write, the word-processing tool, is fully compatible with Microsoft Word and is far superior to Word when it comes to advanced design elements such as frames, columns, and tables—functions that veteran Word users often reluctantly consign to PowerPoint.

Ability Spreadsheet is virtually identical to Microsoft Excel and offers nearly all the functions and styles that Excel supports. Ability Photopaint supports 25 image formats, and its library of more than 90 filters and artistic effects rivals the palette of Adobe Photoshop Elements and similar products. What's more, the program will accept any Adobe Photoshop-compatible plug-in.

If you're running a small business, you'll find Ability Database to be a very useful tool. It can be purchased separately ($29.99), as part of the Classic and Small Business editions (both priced $59.99, but you give up the presentation program with the former and the photo-editing program with the latter) or as part of the Professional edition ($74.99, but it includes everything).



Ability Spreadsheet offers nearly all the features found in Microsoft's considerably more expensive Excel.

The reason relational databases such as Ability are so useful for small-business owners is that they're capable of much more sophisticated data management than can be accomplished using a spreadsheet. With a spreadsheet, you can arrange data in rows and columns and sort it alphabetically or numerically. With a database, you can formulate complex queries and produce sophisticated reports and forms. Even at $74.99, Ability Office Professional Edition is a compelling value compared to Microsoft Office, which only includes a database program as part of its $499 Office Professional Edition.

ABILITY OFFICE 4.1 **7**

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to and from other Office modules are unsurpassed. And no other product in its class delivers a richer library of typefaces, type sizes, and fonts. Word also has unsurpassed editing functions for marking-up documents you're working on, and then allowing other users to see the changes. The built-in spell checker is updated from earlier versions of Word, and it easily "remembers" words added to its built-in dictionary.

Excel and PowerPoint also deserve their privileged status as the spreadsheet and presentation tools of choice. Excel 2003 has a new feature called Range Lists, which can compute and mark subtotals in its own row. You can now also compare separate Excel sheets side-by-side, rather than having to go back and forth from one Excel file to another.

PowerPoint 2003's main assets are the rich library of pre-bundled templates you can use to design presentations. And because PowerPoint is a Microsoft product, numerous additional templates are often made available as free downloads on Microsoft's website. Once you download them, you can install them easily in your own copy of PowerPoint.

Outlook is feature-rich as an email client and appointment scheduler, but it's relatively weak as a contact manager that enables you to keep track of customers and prospects. (If this is something you need, look into Microsoft's $499 Office Professional Edition, which includes Outlook 2003 with Business Contact Manager.)

If you don't need even the standard Outlook's feature set and use only email, you might find Microsoft's Outlook Express (a component of Internet Explorer, not Office) to be a viable alternative.

MICROSOFT OFFICE 2003 STANDARD **6**

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www.microsoft.com/office

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5 Reasons Not to buy Office

EasyOffice

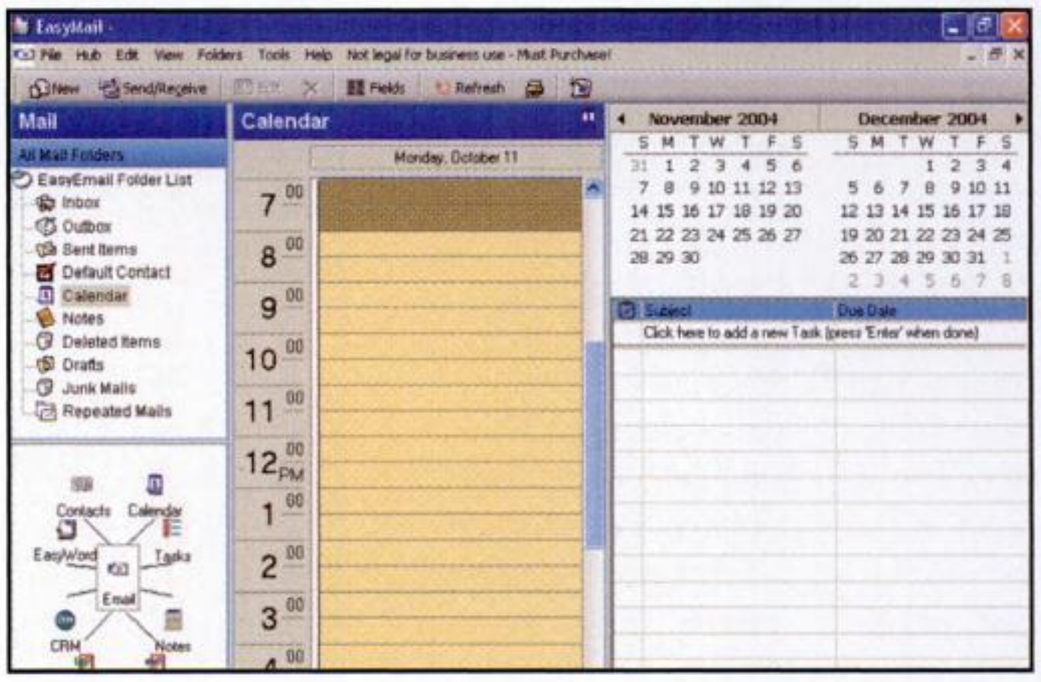
MORE FEATURES THAN ANY OTHER OFFICE SUITE

EasyOffice just might be the best alternative to Microsoft Office you'll ever encounter. It's not only less expensive—you can't get cheaper than free, for personal use; commercial licenses are available for as little as $28—but it's also packed with more features than any other suite.

Going far beyond the ubiquitous word-processor and spreadsheet, EasyOffice covers just about every activity in which an individual or small business might engage, and the latest version sports integrated PDF compatibility.

Each module shares a consistent user interface, and it's a breeze to share data between any of them. EasyMail is one of the suite's highlights. This email client's user interface consists of a four-paned window with an appointment scheduler in one pane, a monthly calendar in a second, and your mail folders in a third. The fourth panel harbors a spoke-like arrangement of icons for launching the suite's other applications.

EasyOffice also includes business-presentation software, a relational database, photo-editing software, a bookkeeping program, back-up software, contact-management tools, and more. Move up to EasyOffice Premium ($44 for the CD-ROM) and you also get file-encryption software, a website-design program, anti-spyware, and an anti-spam utility.



EasyOffice's robust email client, EasyMail, can teach Microsoft Outlook a thing or two.

EASYOFFICE 8

$0 (freeware)
www.e-press.com

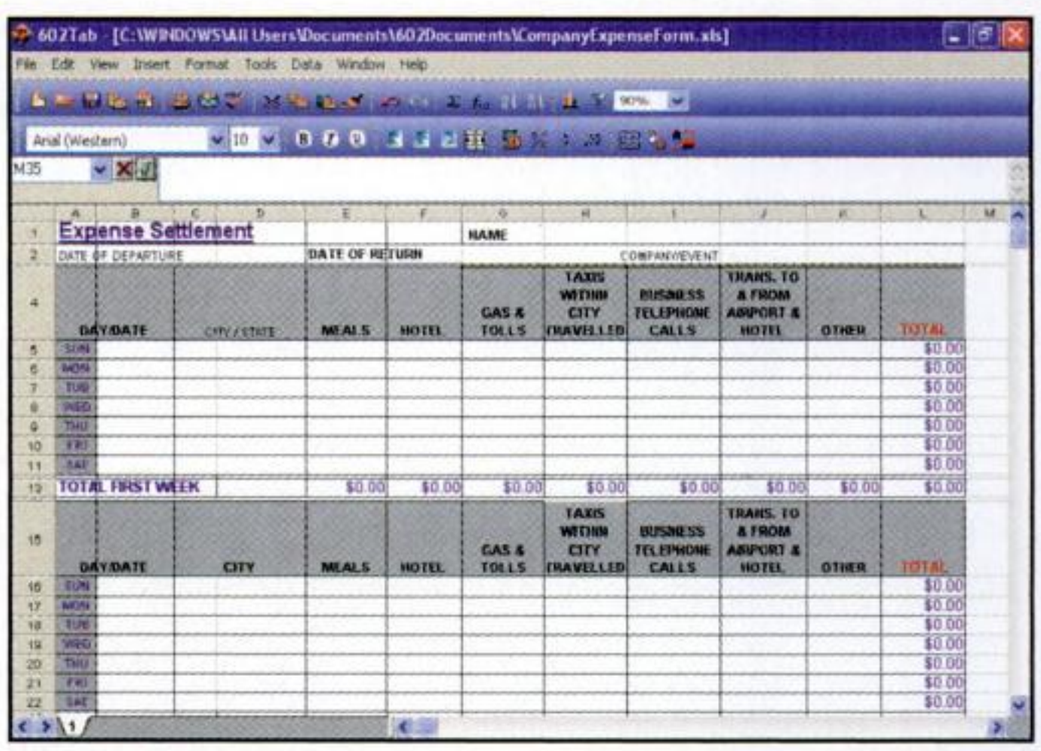
602PC Suite 4.1

COLORFUL, ATTRACTIVE, AND EASY TO WORK WITH

602PC Suite consists of word-processor, spreadsheet, and photo-editing modules. The absence of a tool for creating business presentations is a serious drawback for an office suite, but this omission is mitigated by the low price tag of just $39.95. Each license entitles an employee to also install the software on their home computer, and multi-user licenses are priced as low as $79.95 (for up to three users).

The word-processing module, 602Text, is far superior to MS Word in the way it handles graphics. Inserting pictures in Word involves navigating through a series of pull-down menus. If you want to draw shapes or insert bar codes, you must cut and paste them from other programs. These exercises are accomplished much easier in 602Text, often requiring just a single click on the program's toolbar. This program, however, offers far fewer fonts and type styles than most of the competition.

602Tab, this suite's spreadsheet tool, had difficulty maintaining the cell dimensions of spreadsheets we imported from Excel. You might have to do some tweaking to get your Excel spreadsheets to look right.



602PC Suite comes with a good word processor and image-editor, but its spreadsheet is only mediocre.

The program does, however, offer 12, 2D, and 3D graph formats.

602Photo is a basic photo-editing/photo-album tool offering red-eye removal, one-click color correction, and slide-show tools. It's much more powerful than MS Paint, but not nearly as robust as dedicated tools such as Paint Shop Pro Studio.

602PC SUITE 4.1 6

$39.95
www.software602.com

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OpenOffice.org 2.0.1

DON'T JUDGE THIS SUITE BY ITS COVER

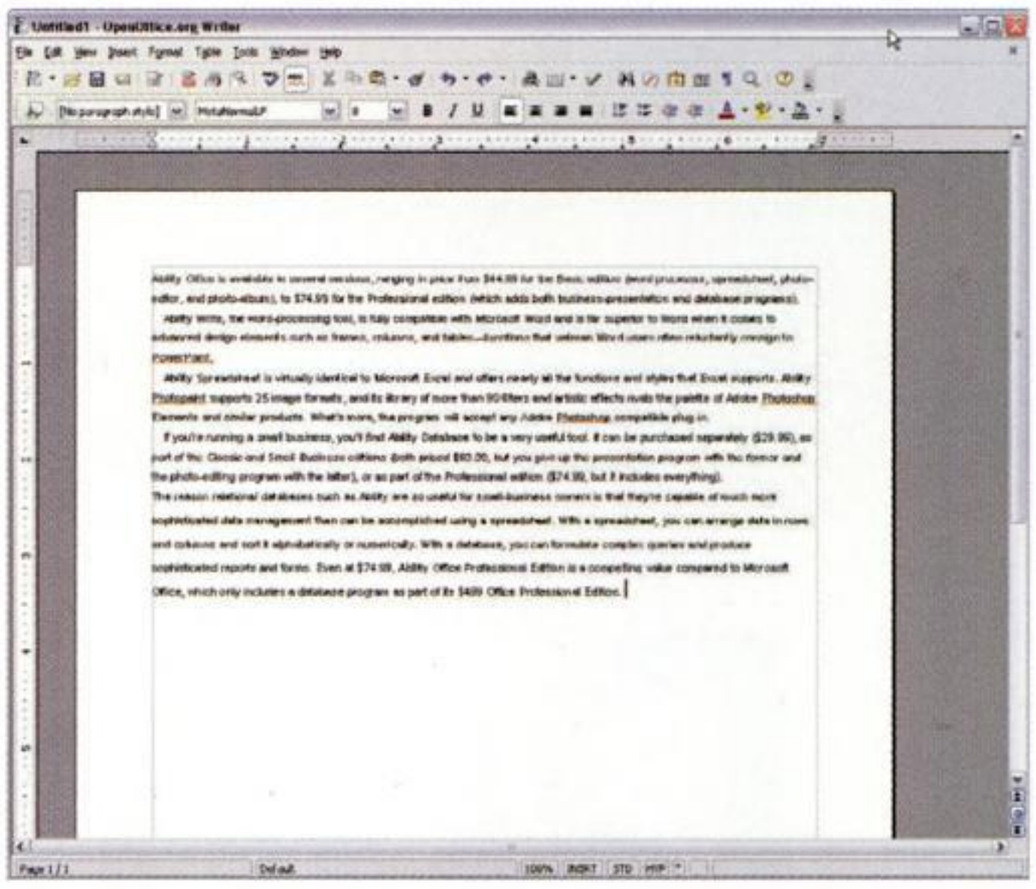
OpenOffice.org is a freely available collection of software that delivers more innate functionality than just about any other office suite. Aside from the fact that it doesn't include email or scheduling software, it's as good—if not better—than *Microsoft Office*.

Writer is a word processor with much of the functionality of *Microsoft Word*. Although *Writer* does not offer the rich font and typeface library that *Word* is endowed with, the innovative Stylist and Navigator tools make changing the formatting throughout the document a task easily accomplished in one or two mouse-clicks.

Using the spreadsheet tool, Calc, you can perform financial analysis, produce databases, and create charts in much the same way you do with *Excel*. In fact, some exercises are easier to pull off in Calc than they are with Excel.

The suite's presentation tool, Impress, lives up to its name thanks to its animation and visual-effects tools, which are far superior to those you'll find in Microsoft's *PowerPoint*.

If you need to draw complex diagrams, flowcharts, and



OpenOffice.org's word processor offers all the features that MS Word does, and it's completely free.

illustrations, you'll appreciate Draw. Draw delivers all the features of Microsoft's *Visio Standard* ($199), which doesn't come bundled with *any* version of Office.

OpenOffice.org's only real drawback is that it looks rather primitive. Fortunately, this is a situation in which looks are deceiving: *OpenOffice.org* is a fabulous office suite.

OPENOFFICE.ORG 2.0.1 — **8**

$0 (That's right: free!)
www.openoffice.org

WordPerfect Office 12

A NOT SO SWEET ALTERNATIVE

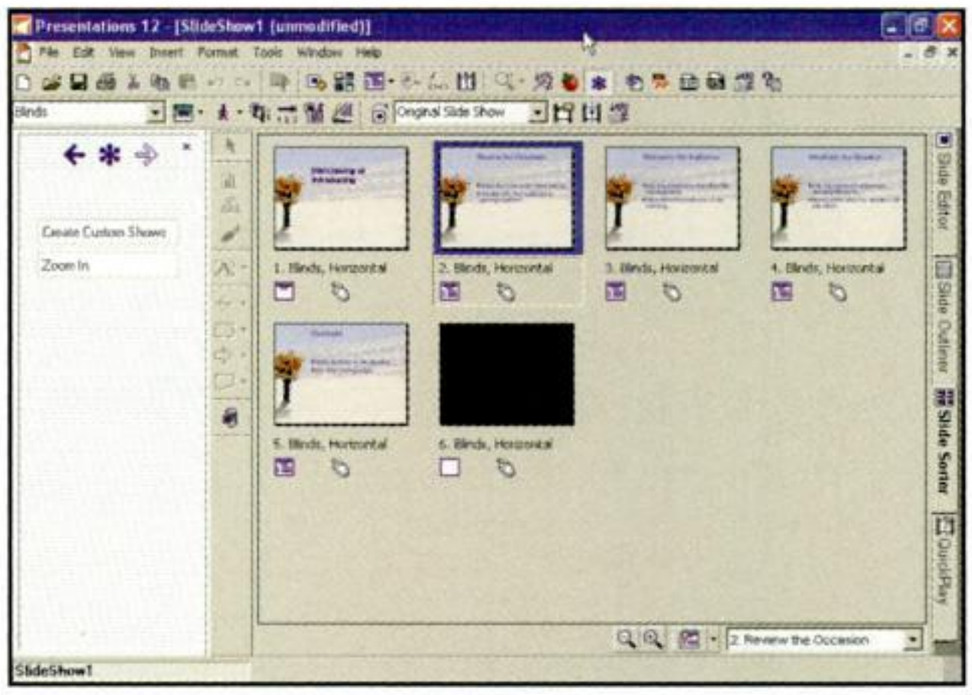
WordPerfect was *the* standard word-processing program in the 1980s and early 1990s—much like Microsoft Word is today. WordPerfect's decline from prominence wasn't due to an absence of quality or powerful features; rather, it was caused by the business misfortunes of the companies that have produced this program over the years.

If word processing is your primary application for a PC, you can't do better than WordPerfect. Unfortunately, the other utilities in this office suite are somewhat less than, well, perfect.

In addition to the WordPerfect word processor, WordPerfect Office 12 has two other primary components: Quattro Pro 12, a spreadsheet program in the vein of Microsoft Excel, and Presentations 12, a business graphics program similar to PowerPoint.

WordPerfect has some features that Word does not. One of the most important is that you can save any document as a PDF (a universal file format that can be read by anyone who downloads the free Adobe Reader).

There's very little about Quattro Pro to differentiate it



WordPerfect Office 12's Presentations tool can't match Microsoft's PowerPoint for features or ease of use.

from Excel, however, and you'll find many more third-party resources and reference materials for Microsoft's product.

Presentations 12 is likewise inferior to PowerPoint. Both programs offers preset templates for slide shows, but Presentations does not have anywhere near the variety of colors and styles that PowerPoint does. MPC

WORDPERFECT OFFICE 12 — **6**

$239.99
www.corel.com

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Dump IE for Firefox!

It's time to tank Microsoft's fossil of a browser for a dynamic and customizable open-source wonder!

BY JOEL **DURHAM JR.**

Microsoft's *Internet Explorer* is a perfectly capable browser. It allows you to navigate the web, it lets you download stuff, and—who are we kidding? Without a major update in years, *IE* has fallen way behind in the browser race. It's about as secure as a sieve, and version 7 is still a ways off. We can't fault you for using *IE*, as it's bundled with Windows and it's probably the first and only browser many people know about. But just because it's there, and "free," doesn't mean you have to be shackled to it. After reading this article, you have no excuse not to be using a new browser, a free browser—a better browser: Mozilla's *Firefox*.

This open-source, standalone browser has transformed from a dark horse to a major player in the relatively short time since its official 1.0 release in November 2004. It's gnawing away at the market, edging toward a double-digit percentage, and Microsoft is even starting to notice. The Giant from Redmond is planning to incorporate some of the features made popular by *Firefox* into the next version of *IE*, including the dreamy goodness of tabbed browsing.

Tabbed browsing lets you do all of your browsing in one window. Instead of having a half-dozen windows open and scattered about the desktop, all of the web pages you visit are open in a single display, represented by tabs across the top of the window. Want to jump from *Maximum PC's* website to your most recent Google search? Just click a tab. Tabbed browsing is an integral feature of *Firefox.* Trust us, it's like color TV—once you try it, you'll never want to go back to black-and-white. *Ever.*

However, there's far more to *Firefox* than tabbed browsing. *Firefox* also loads web pages with blazing speed and efficiency; it integrates popup blocking (something it's done since before Windows XP Service Pack 2 added that capability to *IE*); it's arguably more secure than *IE*; and—this is not only the icing, but half of the cake itself—it's hugely customizable. By downloading themes, which are like skins for *Windows Media Player* or *iTunes*, you can make *Firefox* look however you like. Being an open-source project, *Firefox* can be honed

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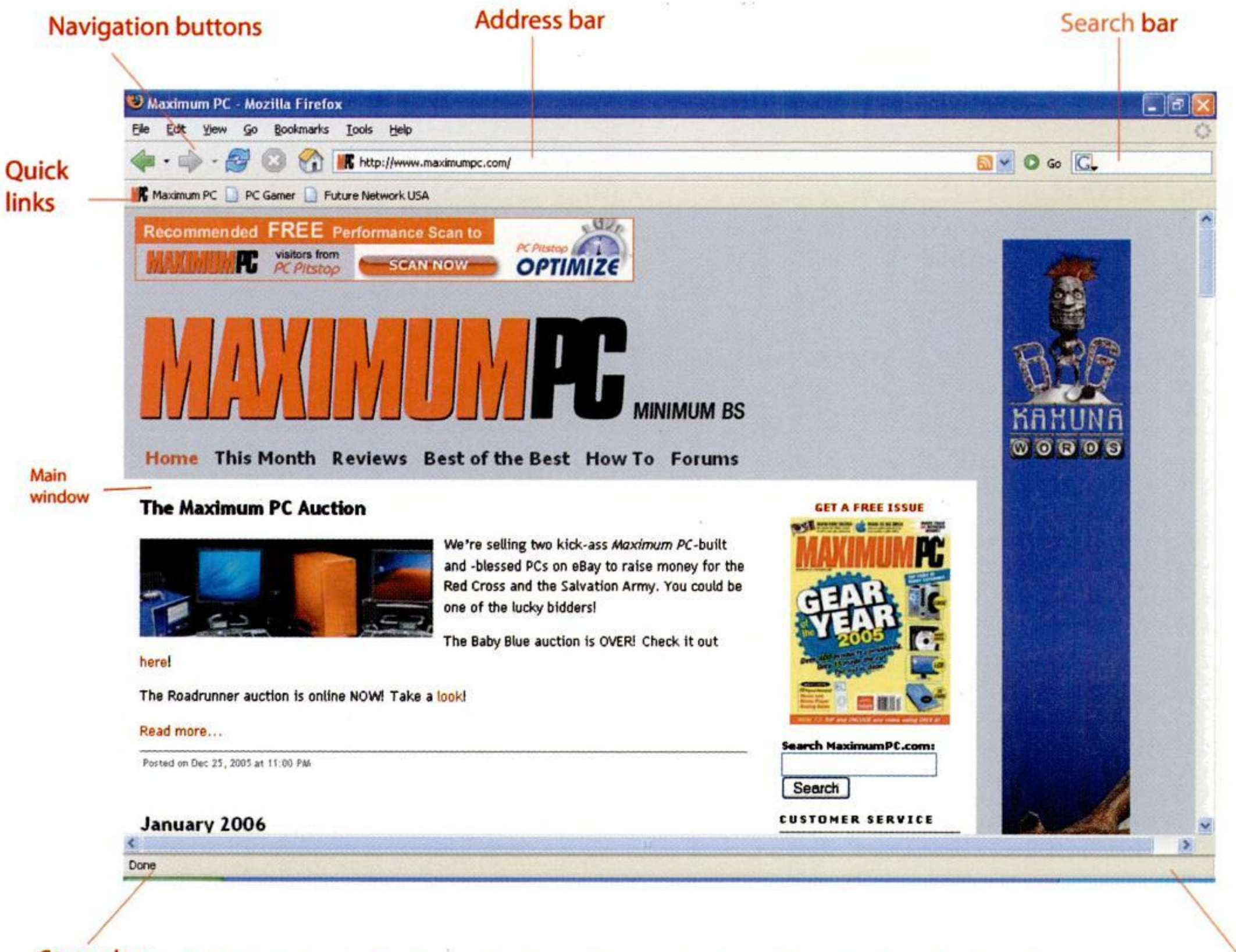
Navigation buttons
Address bar
Search bar
Quick links
Maximum PC - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
http://www.maximumpc.com/
Go
Maximum PC
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Future Network USA
Recommended FREE Performance Scan to
visitors from PC Pitstop
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PC Pitstop OPTIMIZE
MAXIMUM PC
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Home This Month Reviews Best of the Best How To Forums
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We're selling two kick-ass Maximum PC-built and -blessed PCs on eBay to raise money for the Red Cross and the Salvation Army. You could be one of the lucky bidders!
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This is the basic *Firefox app* before adding extensions. It's a simple and elegant browser.

and improved by anyone. It's designed to accept modifications, called extensions, which add just about any capability that a software writer can imagine.

With *Firefox* extensions, you can enhance your tabbed-browsing experience beyond what's offered by the core program. You can block ads, control media players, monitor the weather, block scripts, download entire web pages worth of links at once, and even keep a constant eye on the condition of Abe Vigoda. Literally hundreds of *Firefox* extensions are available on the web, both through the browser's built-in extension manager and through third-party websites. To install one, simply navigate to its page and click on the *Install* link; Firefox will take care of the nuts and bolts. The most you'll have to do is restart the browser for the new extension to become active.

Firefox is the featured product on Mozilla's new website at http://www.mozilla.com, where you can download it with a single click, and the current version as of this writing is 1.5. When you install it, it will import your bookmarks (excuse us, your favorites) from *IE*, as well as a number of other preferences. Browse around with it for a little while. When you're ready to make it even better, hit the Tools menu to fire up the Extensions dialog box. Click Get More Extensions to browse Mozilla's *Firefox* extensions depot.

Better yet, just read on while we outline some of the most useful extensions available, along with some of our personal favorites. Unless otherwise noted, each extension can be found at https://addons.mozilla.org/extensions.

Tabbrowser Preferences

Tabbed browsing is part of *Firefox,* but you might want more control over the power of the browsing tabs than the base program offers. *Tabbrowser Preferences* has been one of the most popular *Firefox* extensions since the days before *Firefox* was a separate product from Mozilla. (Its sister product, the email application *Thunderbird*, was released at the same time).

Tabbrowser Preferences lets you do tricks like force pages rustled up in the search bar to open in new tabs; relocate the browser tabs to the bottom of the

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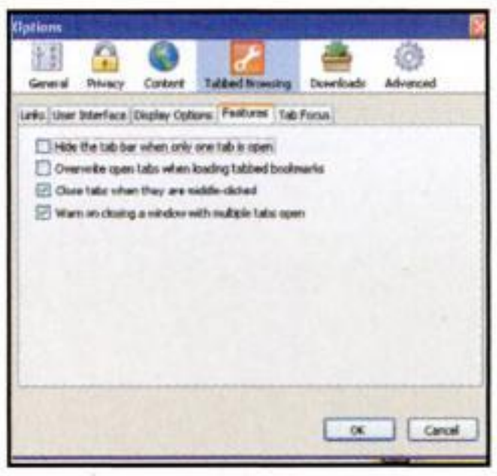
Dump IE for Firefox!



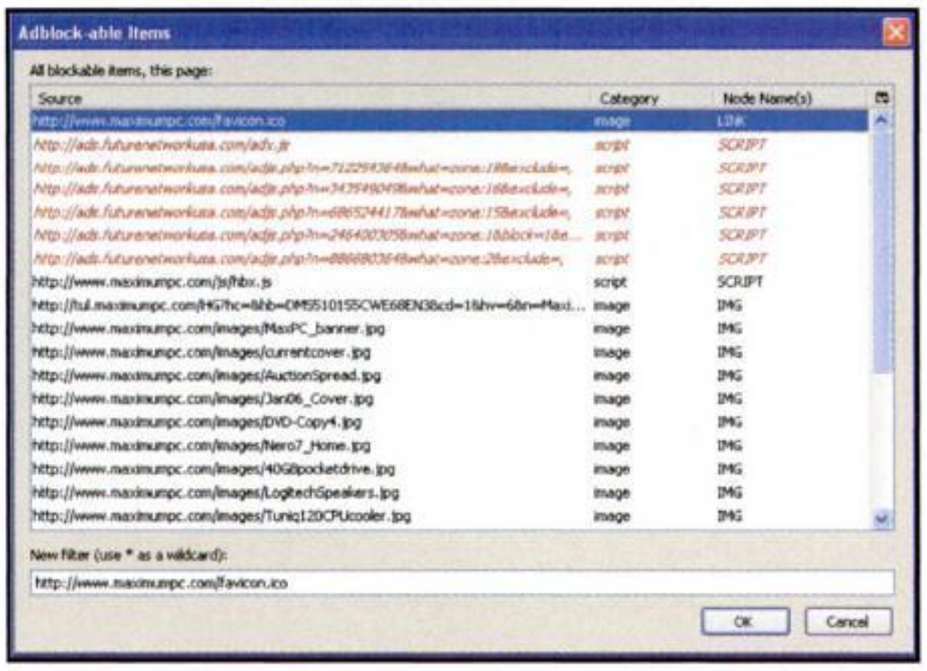
***Tabbrowser Preferences* adds its own preferences page to the Tools/Options dialog box.**

Firefox window; force the bar to be displayed even when only one web page is open; and even load URLs that you punch into the address bar in a new tab. You can drag URLs from web pages onto the tab bar to open them in new tabs. You can do just about anything with browser tabs that you can think of besides peel them off your monitor to use as placemats.

If you use just one extension, make it *Tabbrowser Preferences*, for without it *Firefox* doesn't feel like a complete product. The added functionality truly should have been included in the main program, but that goes to show how powerful the ability to accept extensions makes *Firefox* as a product.

Where to get it: http://216.55.161.203/theonekea/tabprefs/

AdBlock Plus



AdBlock Plus lets you filter out any number of ads, scripts, and images.

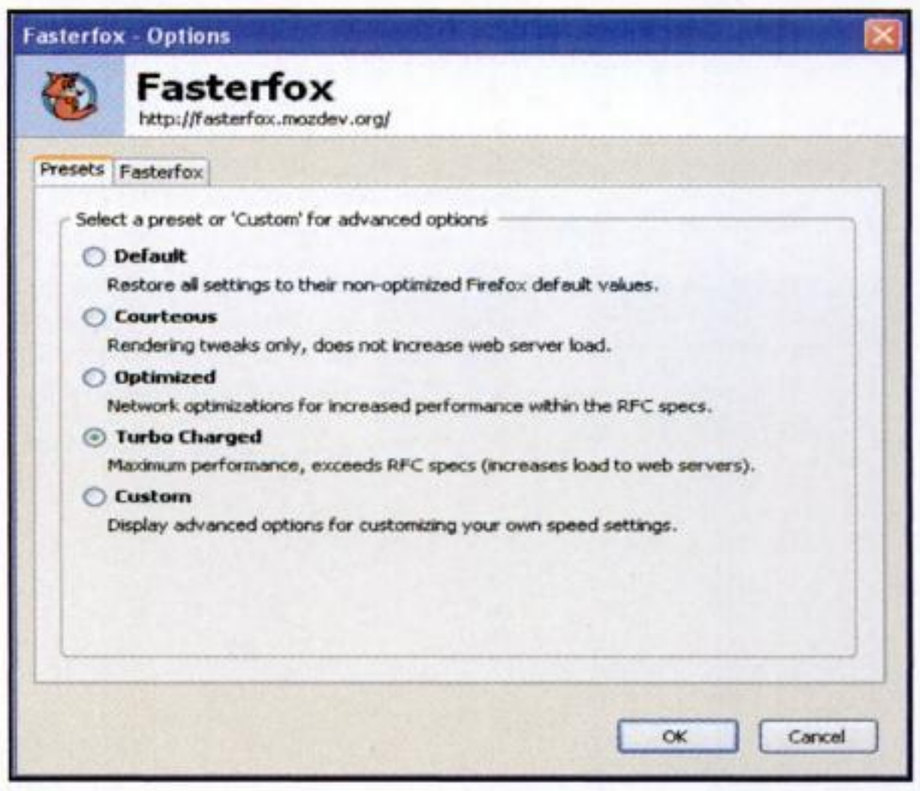
Web ads get more annoying with each passing day. They're more colorful. They're more animated. They bloat to fill the window when you accidentally roll your mouse over them. They make noise. They play entire, unsolicited movie trailers. Make them go away with *AdBlock Plus*!

Once you install this extension, making ads disappear is a matter of navigating the right-click context menu or, in the case of Flash-based ads, clicking a tab. *AdBlock Plus* will simply make the ad vanish, and you can browse without sales pitches assailing your screen.

AdBlock Plus' advanced menus can be used to block scripts (for example, JavaScript-based ads) and just about any image on a website from downloading. Through an interface invoked when you click on the *AdBlock* button in the bottom right of the browser's status bar, you can choose from a list of *AdBlock*-able items on the page and filter stuff out selectively. *AdBlock Plus* even lets you block blank iframes where ads used to appear, and eliminate text breaks where ads would show up on a lesser browser.

Where to get it: http://forums.mozillazine.org/viewtopic.php?t=266291

Fasterfox



***Fasterfox* turbo-charges your browsing experience!**

Firefox is, by nature, a very fast browser. It loads several parts of web pages simultaneously, reducing the waiting time to almost zilch on a fast broadband connection. It's also an extremely tweak-friendly browser, which is why this front-end, *Fasterfox*, is available: it lets you fiddle with some *Firefox* options that aren't readily available in the main options interface.

Fasterfox was designed to make *Firefox* load pages even more quickly. It comes with a number of preset configurations, the fastest of which is aptly named "Turbo Charged." It also lets you dig into the meat of the program with custom options, including HTTP pipelining; tweaking memory, disk, and DNS cache; adjusting the maximum number of HTTP connections available; and enabling a mode called FastBack that keeps pages from the browser history in memory for nearly instant availability. Plus, it includes a small enhancement for the built-in *Firefox* popup blocker that handles popups opened via a Flash plug-in exploit.

IEView

We detest it, but some web developers build pages that work only in *IE*. Why? Are they biased, or just oblivious? The sad fact is that Microsoft's browser still owns 90 percent of the world's browser market, and some people don't consider *Firefox* users worth

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***IEView* is a handy way to open the Microsoft browser when it's absolutely necessary.**

catering to.

Drop in the *IEView* extension to make it simple to switch to "that other browser" for compatibility's sake when necessary. *IEView* installs itself as a right-click option: if you click in the body of a web page, you'll have an option to open that page in *IE*, and if you click on a link within a page, *IEView* will let you open that link in *IE*. With one click, *IE* will rear its head on your desktop with the requested page loaded and ready.

Get All the Answers

Get some Answers when you encounter mysterious wording on the web.

Don't you hate it when you're innocently surfing about and you encounter a page on which someone uses big words such as *existential* and *antidisestablishmentarianism*? There's no need to open a new browser tab and navigate to your favorite dictionary site: With the *Answers Firefox* extension, you simply hold down the Alt key and click on the word that's nagging you, and the browser will navigate to a definition on Answers.com.

Through the Options dialog box (which you access by launching the Extensions window, clicking the *Answers* extension, and clicking the Options button), you can control whether you activate the *Answers* extension using Alt-plus-either-mouse-button or just the right mouse button. You can also hold the Ctrl key to force the Answers.com page to load in a new tab, or you can fire it up in a new window by holding down Shift.

TinyURL Creator

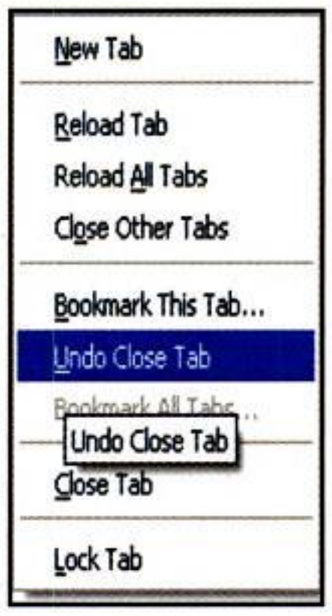
What would have been a long and winding URL is now just a few characters long.

TinyURL.com is a fantastic little web service that takes huge, mammoth URLs and transforms them into itty-bitty strings. The benefits are many: you can share URLs in email messages that cut off the link when they wrap large addresses; you can punch in long URLs without accidentally entering a typo and ending up at a frightening adult site that sells ball gags; and so on.

Installing *TinyURL Creator* lets you make precious, small URLs out of any page or link through a right-click context menu. Have it at the ready when you encounter one of those URLs with what seems to be random strings of ASCII gobbledygook and right-click on it, then click Create TinyURL for this Page, and give it a second. A dialog box with a small URL will appear and offer to let you go to that page or save the URL, and it'll also automatically copy the little address to the Windows clipboard.

Where to get it: http://www.roundtwo.com/product/tinyurl

undoclosetab



Help! I just closed my Maximum PC.com tab! Phew—undoclosetab can save me!

You're power-surfing with *Firefox*. You're comparing prices of a rubber chicken at 12 different sites. (Shipping and handling included.) Of course, you're rocking a whole batch of tabs, switching back and forth like the wind of a strong storm. Suddenly, you accidentally close a tab. It's gone. That's the site you were thinking of purchasing from. What do you do? It took at least 10 clicks to get there, and you forgot the name of the online store.

Here's what you do: you install *undoclosetab*, an extension that adds an option to the right-click context menu called, of all things, Undo Close Tab. When you accidentally close a tab, right-click on the tab bar and click it; the tab will magically reappear as if it were never closed in the first place. This extension can be a huge time-saver, if not a money-saver.

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Alienware® recommends Microsoft® Windows® XP.

What Competition?

ALIENWARE®
THE ORIGINAL ULTIMATE GAMING MACHINE

Exclusive MaximumPC rebate and DUNGEONS & DRAGONS ONLINE™: Stormreach™ wallpaper available at:
www.alienware.com/guide

(254-3692)
1.800.ALIENWARE

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Dump IE for Firefox!

DownloadThemAll

Tear through downloadable content with ease!

Have you ever come across a site with a few dozen pictures that you want to save on your hard drive? Or have you ever wanted to download a batch of executables from one page that links to each one? It's a pain in the keister to click each one, select the download location, rinse and repeat, but now you don't have to bother.

With this extension, you can magically right-click on the page and select *DownloadThemAll*. A dialog box opens and allows you to choose a recipient folder, filter the download to ensure you get only the file types you're looking for, and start the downloading process. Sit back, and with a minimum of effort your hard drive will soon be filled with goodies.

The filters are customizable, so you can add or tweak them as needed. The preferences even let you rename the files as they are downloaded so you don't have to do that manually, either. Best of all, this extension works without an external download manager, so all you need is *Firefox* and *DownloadThemAll* and you're ready to siphon content galore.

Where to get it: http://downthemall.mozdev.org/

NoScript

Allow only the scripts you really want to run with NoScript, a security powerhouse for *Firefox*.

We've already introduced you to *AdBlock Plus*, which can, if you tell it to, block scripts. However, for another level of protection, download *NoScript,* which automates the script-blocking process to enhance security and surfing in general, blocking JavaScript and Java unless you expressly allow them to run. In fact, *NoScript* blocks *all* scripts at first, until you selectively indicate which ones you'd like to run.

This extension drops an icon into the *Firefox* status bar. Click it, and you can choose to allow scripts to run on any of the domains you're currently connected to. For example, some games are written in JavaScript or even in Java. If you want to play them and you've installed *NoScript*, you'll have to give the thumbs-up to the necessary domain.

On the other hand, a great deal of ads and even exploits are written in script languages, the latter of which are sometimes employed by sniveling hacker-wannabes to attempt to compromise your computer. Shut them down and surf safely with *NoScript*.

Where to get it: http://www.noscript.net/

Leet Key

Leet Key: The Most Necessary *Firefox* Extension Ever.

Ever feel the need to be 1337? It happens to the best of us. You can t0tally R0><0R your form-typing with *Leet Key*, an extension that oozes geekdom. With the click of a mouse, you can turn automated translation from standard English to "leet" writing (|1k3 7h15, f0r 3x4mp|e) on or off, or a number of other options, like ROT13, Base64, Dvorak keyboard layout, Morse code, binary, and so on—and you can translate most of it back into something more readable. This extension is ideal for turning *Firefox* into a highly effective coder/decoder for stumping your parents. Hit a web forum, type a message in ROT13, and your friends can decode it when they're safe from the lurking POS (parent over shoulder). Or, to be fair if you're a parent, keep this extension handy in case you need to do some decoding for your own security reasons.

Of course, if you 5p33k 1337 all the time, real people will make fun of you. They just don't understand the life of an h4x0r.

Gmail Manager

Proving that viral marketing is a force to be reckoned with, Google's *Gmail* service spread through the Net in a flash of industry dominance. It seemed like one day message boards were awash with posts containing pleas for a *Gmail* invite, and a week

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I have 100 Gmail invites. Anyone want one?

later they were flooded with posts stating "I have 50 *Gmail* invites. Anyone want one?"

Gmail Manager makes it a snap to manage multiple *Gmail* accounts. The tiny applet lets you enter all of your accounts into its interface, and then it monitors them for you as you surf with *Firefox*. When a new message comes in, *Gmail Manager* opens a small notification window, and you can then access the account by clicking on an icon in the status bar. It can open *Gmail*, with your account up and at the ready, in a separate tab to avoid interrupting your current browsing activities.

Where to get it: http://www.longfocus.com/firefox/gmanager/

FoxyTunes

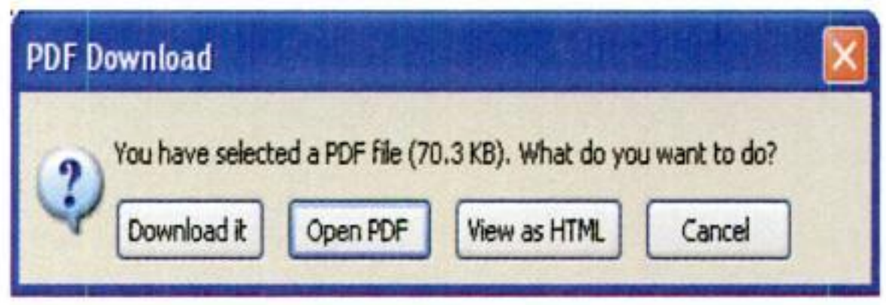
***FoxyTunes* lets you control the media player of your choice.**

A media player is a must-have for long, rainy afternoons when you're trudging through spreadsheets or simply browsing the Net. One that anchors itself to any place within your *Firefox* browser that you'd care to drop it is even better. *FoxyTunes* is basically a front-end interface for controlling your music (be it on a hard drive or a CD) through *Firefox* without having to deal with the actual media player that's controlling the media.

FoxyTunes doesn't control the media itself; it lets you choose from a number of players, including *MusicMatch JukeBox*, *WinAmp*, *foobar2000*, *iTunes*, *Windows Media Player*, and more; and it lets you play, stop, pause, skip tracks, adjust the volume, and perform other basic tune-playing functions.

Not only a media controller, *FoxyTunes* also includes an alarm clock, a sleep timer, and even its own skin chooser, to offset *Firefox*'s visual themes.

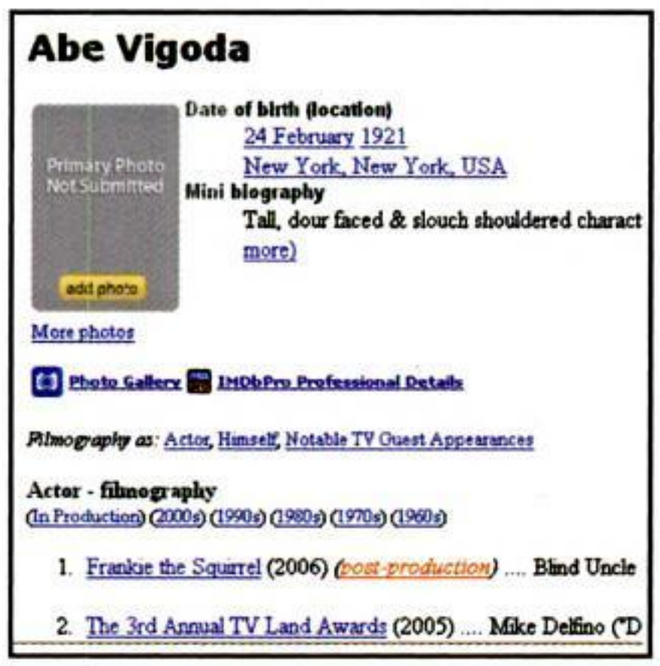
PDF Download



***PDF Download* gives you the power to avoid PDF traps.**

A simple savior, *PDF Download* leaps between you and browser-displayed PDF files like the Secret Service taking a bullet for the President. You know the anguish when you click on a link and suddenly realize that it's going to take a looongggg time to load because it turns out to be a PDF? *PDF Download* intercepts those clicks and pops up a dialog box informing you that you've just clicked on a PDF file. Would you rather download it, view it as HTML, cancel the whole thing, or allow the browser to display it? Finally, those PDF land mines are defused.

Abe Vigoda Status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Date of birth (location)
24 February 1921
New York, New York, USA
Mini biography
Tall, dour faced & slouch shouldered charact
more)
More photos
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Actor - filmography
(In Production) (2000s) (1990s) (1980s) (1970s) (1960s)
1. Frankie the Squirrel (2006) (post-production) .... Blind Uncle
2. The 3rd Annual TV Land Awards (2005) .... Mike Delfino ("D

Abe Vigoda is alive.

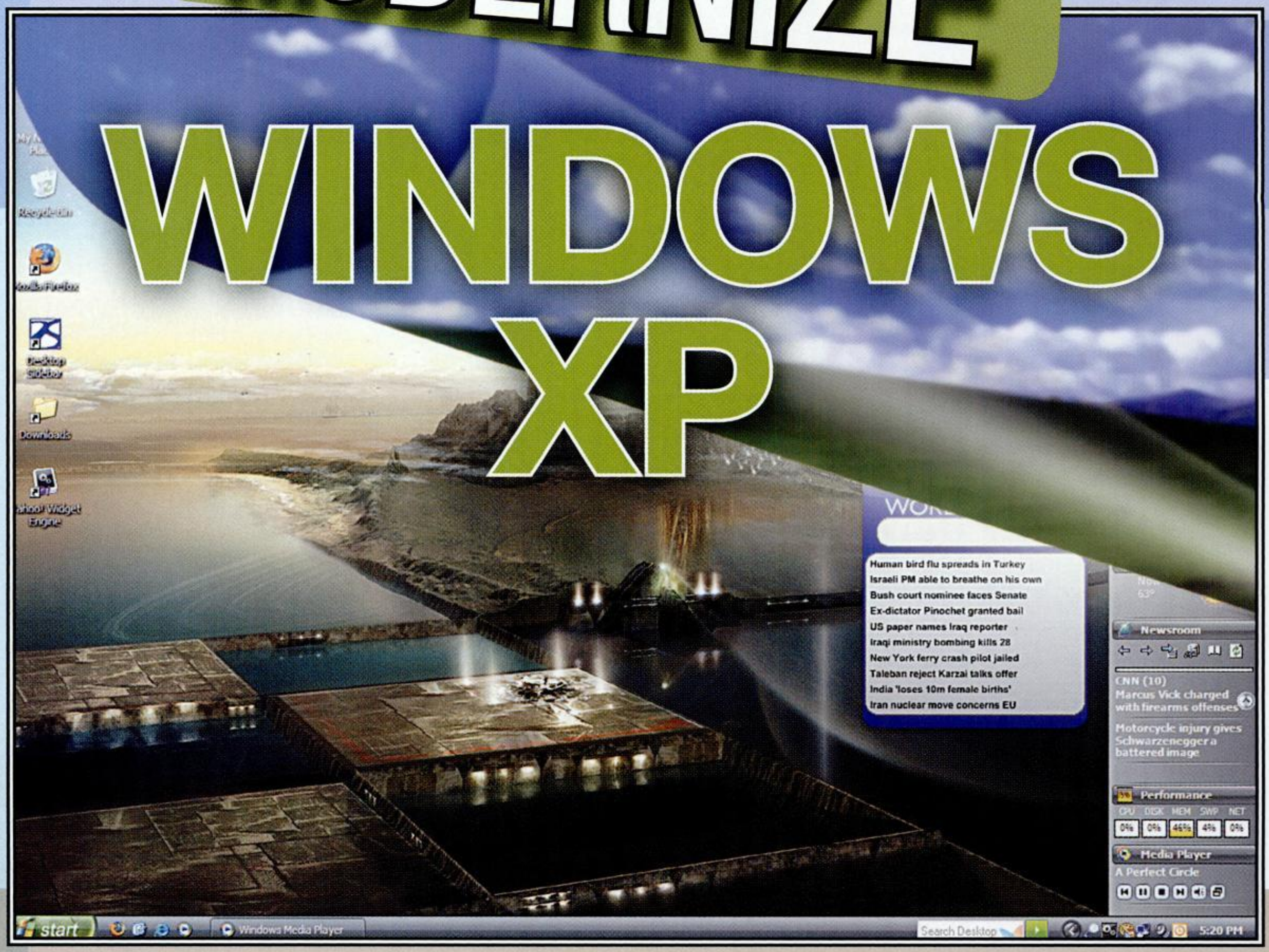
Abe Vigoda, better known as "Fish" on *Barney Miller* or Sal Tessio in *The Godfather*, is the ultimate stumper in the game "Celebrity Dead or Alive?" You've played it: you ask a victim "Gregory Peck! Dead or alive?" and they make a guess and counter with "Abe Vigoda! Dead or alive?"

Now you no longer have to sit there with your jaw in your lap as you ponder Fish's current status. This *Firefox* extension displays a small portrait of Abe himself in the status bar, next to which it reveals his current state of freshness. As I write this, Abe Vigoda is alive and well.

Install this extension and you'll wonder how you possibly got through life without it—and without *Firefox*. The *Abe Vigoda Status* extension is just one of the many reasons, albeit a tongue-in-cheek one, to make the switch from *IE* to *FF*. And there's no time like the present! MPC

Read more at Readingtrial

MODERNIZE WINDOWS XP



BY OMEED CHANDRA

Who says you can't teach an old dog new tricks? Whip this aging OS into fighting shape with our expert advice

The first time we used Windows XP, it seemed like the OS of our dreams. After all, XP combined the stability of Windows NT with the gaming chops of Windows 9x, and even threw in a colorful new interface as a bonus. What more could we ask for?

A lot, it turns out. In the more than four years since we awarded Windows XP a perfect 10 verdict, the proliferation of viruses, worms, and spyware has exposed the operating system's intrinsic weaknesses. Meanwhile, continued innovation from Apple has pushed OS X to the forefront in terms of features, flashiness, and usability. Mac users can now boast of their OS's slick UI, instant search, and superior multimedia capabilities.

Luckily, hope is on the horizon. The next version of Windows—Vista—is expected to close the gap on all of these fronts when it's released later this year. But what about those of us who don't want to wait that long for a modern OS? You already know how to secure Windows with antivirus, anti-spyware, and firewall software, but how about bringing it up to date feature-wise? Good news: With a little help from some nifty low- and no-cost utilities, bringing Windows XP up to snuff is as easy as pie. We'll show you how to get the OS goodness you crave without waiting for Vista, or selling your children into servitude to buy a pricey Mac.

FUNCTIONALITY

Five years ago, hard drives were in the 40GB range, many people still used 56K dialup, and only gamers had 3D accelerators. Windows XP was built for those times, but today's world demands an OS that recognizes the promise of faster Internet connections and meets the challenges of locating information on a jam-packed 400GB hard drive. Here are some utilities that can add the functionality you need to Windows XP.

DESKTOP SEARCH

Would you rather be stuck on a desert island with no food, water, and clothing, or try to locate a file on your computer using Windows' built-in search utility? That's a tough call, considering that you could very well die of old age before Windows finds the file you're looking for.

Luckily, thanks to the advent of external desktop search apps, you may never need to use the Windows search utility again. Desktop search programs constantly run in the background, indexing the contents of files on your hard drive as they are created or modified. This facilitates near-instant searches of your computer—you can find and display all the documents on your computer that contain the phrase "Stone Temple Pilots" just as quickly as you could perform the same search on Google. There's no need to worry about sapping your computer's performance either, because most desktop search tools only add to their index while your system is idle.

Until Vista delivers integrated desktop search, Windows XP users have a plethora of free third-party search tools to choose from. Our top choices are *Google Desktop* and Microsoft's *Windows Desktop Search*. Both members of this dynamic duo beat the hell out of old-school search technology, but each one also has its quirks.

Windows Desktop Search (**http://toolbar.msn.com**) is bundled with the *MSN Search* toolbar, which can easily be disabled if you don't want to use it. The toolbar adds rudimentary tabbed-browsing to *Internet Explorer*, and also supports a phishing-protection plugin. When you run a search, *Windows Desktop Search* displays a substantial preview of each file matching your search query, as opposed to the brief summary shown by *Google Desktop*. Our main complaint with *Windows Desktop Search* is that it can't search PDF files out of the box. Microsoft makes you download a separate plugin for that—not the end of the world, but an unnecessary hassle to be sure.

Meanwhile, *Google Desktop* (**http://desktop.google.com**) bundles a groovy sidebar application that lets you download and use all sorts of useful applets on your desktop. (For more information, take a gander at the "Sidebars" section later in this article.) As with *Windows Desktop Search*, you can download plugins that expand the capabilities of *Google Desktop*. You can search many popular file types (including PDFs) by default, and *Google Desktop* will even index your GMail account. However, while Google's search program is a bit more user-friendly than Microsoft's, it's also marginally less customizable, with fewer options exposed to the user. There are tons of third-party plugins for *Google Desktop*, however, that let you add search to almost every common file type.

We recommend you try out both search utilities, then pick the one you like best and uninstall the other. While you can run them both at the same time, we don't recommend it, as the indexing utilities will take a long time to create their respective indices if they both run at the same time.

george harrison - Google Desktop - Mozilla Firefox
Google Desktop
Web Images Groups News Froogle Local Desktop more »
george harrison
Search
Desktop: All - 0 emails - 39 files - 0 web history - 0 chats - 0 other
1-10 of about 39 (0.01s)
Remove from Index | Sort by relevance
Sorted by date
Note: partial results. One-time indexing of your Gmail in progress.
My Sweet Lord [2000] - George Harrison - All Things..
What Is Life - George Harrison - All Things Must Pas..
Let It Down - George Harrison - All Things Must Pass..
Beware of Darkness - George Harrison - All Things Mu..
I Live for You - George Harrison - All Things Must P..

The search interface for *Google Desktop* will be immediately familiar to anyone who uses Google's Internet search engine.

***Windows Desktop Search* will find your files in a split second and display a preview or other contextual data, such as album information for music.**

WIDGETS

What's a widget, you ask? Only the best thing to happen to computers since the Internet! OK, maybe not, but widgets *are* pretty damn cool. A widget is a small applet that resides on your desktop and culls the information you want from your computer and/or the Internet, presenting it quietly and attractively. This information could be anything from the latest baseball scores to a webcam displaying the current ski conditions at your favorite resort.

Decorate your desktop with spiffy widgets to put all sorts of useful info at your fingertips.

Widgets were popularized by a program called *Konfabulator*, which has since been acquired by Yahoo! and dubbed *Yahoo! Widget Engine*. That's a good thing, because Yahoo! reduced the app's price to nothing! Yahoo! also maintains an online gallery of widgets for every occasion—more than 1,600 of them as of this writing. Have a look at **http://widgets.yahoo.com**.

SIDEBARS

Of all the new features set to debut in Windows Vista, we think the on-again, off-again sidebar is one of the coolest. (For a while, the sidebar fell off of the Vista features list, but it seems to be back, at least for the time being.) For the uninitiated, the sidebar is exactly what it sounds like: a long bar down the side of your screen that can display all sorts of fun and useful information, such as weather forecasts (useful), RSS news feeds (also useful), and photos of your dog (fun). This is similar to the concept of widgets; the sidebar simply provides a convenient and prominently visible place to display useful or entertaining info.

And guess what? You don't have to wait for Vista to get some sidebar action. Since Microsoft first demoed the concept several years ago, numerous free third-party sidebar applications have been created. Our top pick is *Desktop Sidebar* (**www.desktopsidebar.com**), which is fast, stable, and boasts a solid library of skins and plugins. Some of our favorites include the ABC BitTorrent Panel, which lets you monitor your BitTorrent downloads; the DSiTunesController plugin, which allows you to control *iTunes* even if it's minimized; and the Calendar Panel, which displays your upcoming appointments from *Outlook*. All of these plugins and more are either included with *Desktop Sidebar* or freely downloadable from the program's web site.

Of course, if you're already using *Google Desktop Search* on your computer, you might simply want to use the sidebar that's included with it. Google's sidebar comes stocked with a bevy of plugins, many of which are related to Google services. For example, the default installation includes a newsfeed from Google News, a rotating display of maps from Google Maps, and a GMail plugin. You also get conveniences such as a to-do list and a web/desktop search box. Dozens of additional plugins are available online (**http://desktop.google.com/plugins**); most of them offer functionality similar to the plugins available for *Desktop Sidebar*.

Google also bundles a sidebar with its desktop search application. It ain't original, but it gets the job done.

PDF TECHNOLOGY

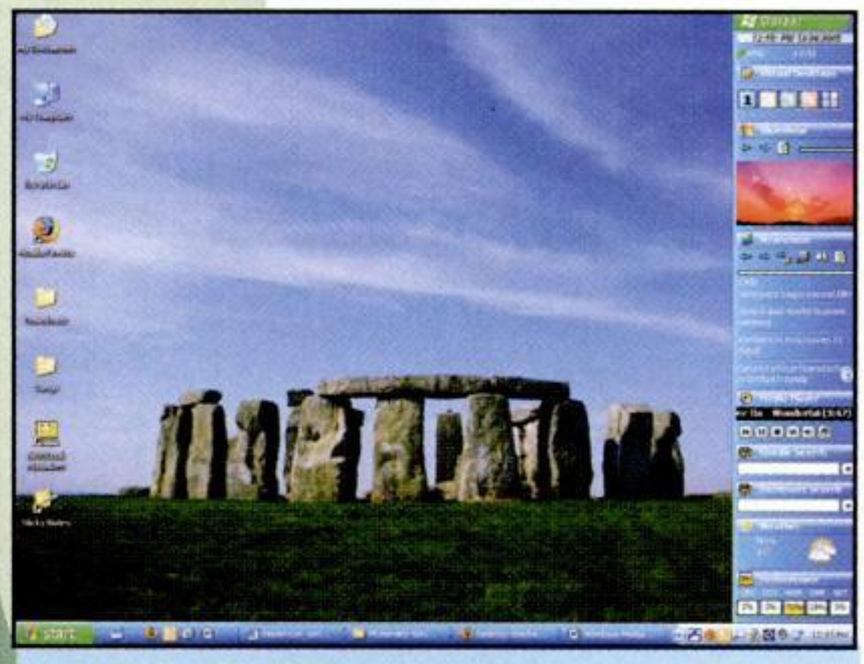
If you've used a Mac recently, you may already know that newer versions of OS X offer built-in support for Adobe's ubiquitous PDF file format—any app that can print can create PDFs. Meanwhile, Windows users are stuck viewing PDFs in the slow and bloated *Adobe Reader* application, and have no easy way to produce their own PDF files. Right?

Wrong! Denizens of Windowsland do in fact have recourse from Adobe's PDF monopoly. For viewing PDFs, we recommend ditching *Adobe Reader* for the lean and mean *Foxit Reader* (**www.foxitsoftware.com**). This program is the most polished and complete alternative PDF viewer we've seen here at *Maximum PC*. It's free, requires no installer, and leaves a footprint of less than 3MB on your hard drive. Best of all, it supports all the most important features of *Adobe Reader*, yet boasts a startup time that's measured in seconds instead of weeks (yes, Adobe, that's a dig).

What about those of us who need to produce our own PDFs? You could shell out the big bucks for a professional PDF-creation program—or you could just download the free, easy to use *PDFCreator* (**www.sourceforge.net/projects/pdfcreator**). This simple open-source tool installs as a printer driver in Windows. That means you specify output settings (resolution, paper size, etc.) through Windows XP's Printers and Faxes utility. Conveniently, it also means you can produce PDF files from any Windows program that's capable of printing.

When you want to export a document to PDF from a program, just use the usual Print command and select "PDFCreator" as your printer. A dialog box will pop up asking you to specify a filename and optional information such as an author and subject. Simply enter the requisite information, click Save, and choose a location for the file. That's all—it's really that easy!

***Foxit Reader* is a fast, streamlined alternative for viewing PDF files.**



Monitor stock prices, check the weather, and keep up on the news—all from the side of your computer screen with *Desktop Sidebar*.

With the free open-source *PDFCreator* tool, you can create your own PDFs from any program that supports printing.

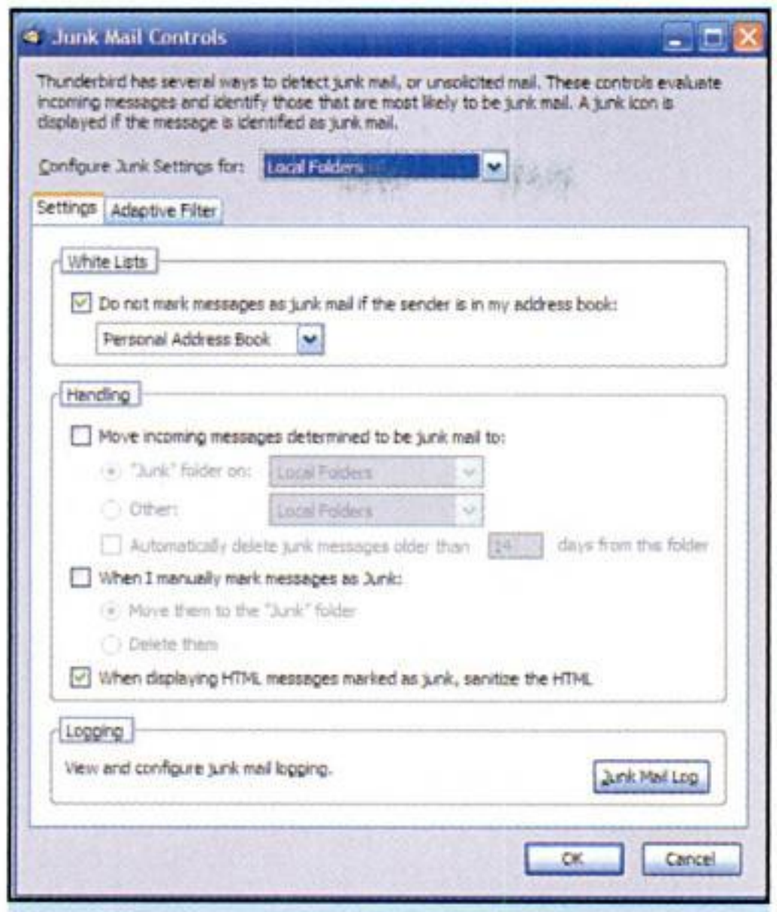
WEB BROWSER AND EMAIL CLIENT

By now, every power user knows that *Internet Explorer 6* is far behind the curve in terms of features and security. Microsoft knows that too, and is busy working on a new version of *IE* that will add key enhancements like tabbed browsing and improved security. We'll reserve judgment on *IE7* until the final version is in our hands, but until then, there's no reason to recommend using *IE6* when two outstanding alternative browsers are available free of charge to Windows users.

Our favorite alternative web browser is *Firefox* (**www.mozilla.com**). The core program offers niceties like tabbed browsing, a download manager, and RSS support. In conjunction with the vast library of extensions available on the Internet, *Firefox* becomes incredibly powerful and almost infinitely customizable. *Firefox* isn't perfect—it occasionally displays a web page incorrectly, and it has a knack for letting misbehaving plugins consume undue amounts of memory—but for the time being, it's almost universally accepted as the best web browser. Grab it today, and check out some extensions on the Mozilla website or at the Extension Room (**http://extensionroom.mozdev.org**).

The *Opera* browser (**www.opera.com**) has also garnered quite a bit of attention since it became a free product. It's a solid browser with a fiercely loyal fan base, and has some interesting features—built-in mouse-gesture support, anti-spyware features, and even voice navigation—that might be worth a try. The interface, however, is not as immediately intuitive as *Firefox's*, and we encountered problems rendering some web pages.

Though it doesn't get as much attention as *Internet Explorer*, the *Outlook Express* email client that comes with Windows is equally dated. If you've already bought a more powerful client such as Microsoft's *Outlook 2003*, you have no need for concern. But if you don't need or can't afford a high-end email client, you might want to consider Mozilla's free *Thunderbird* client (**www.mozilla.com/thunderbird**). It offers all sorts of features not found in *Outlook Express*, from message encryption to a spam filter. And like *Firefox*, *Thunderbird* supports extensions, allowing you to customize and expand its capabilities to your heart's content.


Junk Mail Controls
Thunderbird has several ways to detect junk mail, or unsolicited mail. These controls evaluate incoming messages and identify those that are most likely to be junk mail. A junk icon is displayed if the message is identified as junk mail.
Configure Junk Settings for: Local Folders
Settings
Adaptive Filter
White Lists
Do not mark messages as junk mail if the sender is in my address book:
Personal Address Book
Handling
Move incoming messages determined to be junk mail to:
"Junk" folder on: Local Folders
Other: Local Folders
Automatically delete junk messages older than 14 days from this folder
When I manually mark messages as Junk:
Move them to the "Junk" folder
Delete them
When displaying HTML messages marked as junk, sanitize the HTML
Logging
View and configure junk mail logging.
Junk Mail Log
OK
Cancel

Mozilla's *Thunderbird* email client boasts a junk mail filter and other key features that *Outlook Express* lacks.

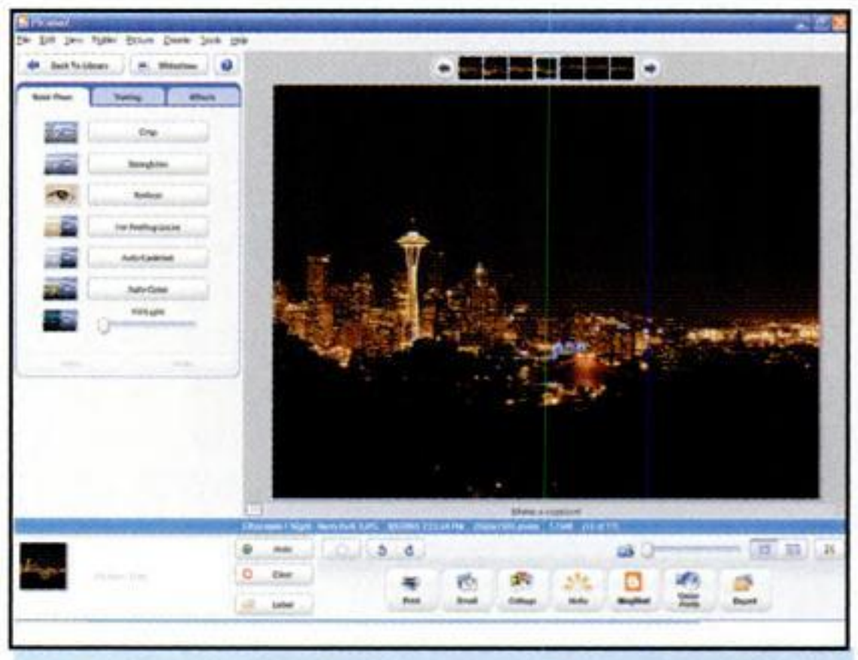
MULTIMEDIA APPS

Multimedia is something at which Apple has always excelled. Its suite of *iLife* apps gives users an easy way to edit and organize photos, make home movies, burn DVDs, and more. Fortunately, you can get most of these capabilities for free on Windows.

Google's *Picasa* software (**http://picasa.google.com**) is great for organizing your photos and making simple touch-ups. Its intuitive interface offers a simple way to sort through your photo library and create your own slide shows. *Picasa* also gives you the power to easily make essential photo edits, such as cropping, color saturation, straightening, and red-eye removal. For the casual photographer, it's a must-have piece of software.

Despite being a niche product, Apple's critically acclaimed *Garage Band* also has a free alternative on the PC. Actually, it's a combination of two programs: *Audacity* (**www.sourceforge.net/projects/audacity**) and *Buzz* (**www.buzzmachines.com**). The former allows you to record and edit multitrack audio, while the latter lets you synthesize your own instrumentals and combine them with other audio tracks to make beautiful music. The catch? Neither app can hold a candle to the user-friendliness of *Garage Band*, and because they're free, community-based tech support is all you'll get. They're very potent tools, however, if you're willing to commit the time to learn them.

You probably know that Windows XP lacks built-in DVD burning and authoring capabilities. Well, there's an easy solution to the first problem: *BurnOn CD&DVD* (**www.burnworld.com/burnoncddvd**), a rudimentary burning app that allows you to burn data CDs and DVDs as well as video DVDs (though you'll need a separate program to create the requisite VOB files). The free version of *BurnOn CD&DVD* displays a pop-up ad every time you exit the program, but it's otherwise a fully featured program.



Organize your photos and make essential edits with Google's free *Picasa* picture-management software.

Unfortunately, if you're looking for a complete, well-rounded video editing and DVD authoring package à la *iMovie* or *iDVD*, you'll have to plunk down the cash for an app such as Adobe's *Premiere Elements* (**www.adobe.com**) or Pinnacle's *Studio Plus* (**www.pinnaclesys.com**). Alternatively, you could hold out for Vista and the new version of *Windows Movie Maker*, which is rumored to include improved editing capabilities and integrated DVD burning.

Step on up to tabbed browsing with the highly extensible *Firefox* browser.

MODERNIZE WINDOWS XP MAKEOVER

Now we've added some much-needed features to Windows XP, but what can we do to make it look better? With a new theme or skin you can give Windows a hip new look!

Admit it: Looks matter. If they didn't, Britney Spears would be a convenience store clerk in Louisiana and more people would drive Volvos. The same principle applies to computers. Although Macs have many positive qualities these days, what do you think is the number-one reason cited by people who switch from Windows? Yeah, that's right: "The iBook is *soooo* cute!" And on the software side of things, let's face it: Windows XP's Luna theme was attractive and modern back in 2001, but this is 2006, folks.

You probably won't have much luck convincing the folks at Dell and HP to stop designing ugly computers, but you *can* overhaul the appearance of your operating system with minimal effort. Our favorite OS-skinning application is Stardock's *WindowBlinds* (**$20, www.stardock.com**), which lets you revamp the look of your entire GUI—Start menu, program windows, desktop icons, the works. *WindowBlinds* boasts a collection of literally thousands of community-created themes, but the latest version of the software also offers a special treat. On systems equipped with a 3D accelerator, *WindowBlinds 5* delivers a few of the slick visual effects of Windows Vista's much-touted Aero Glass UI, such as transparent window borders. It's also much less GPU-intensive than Vista will be—we experienced very smooth performance on a 4-year-old Radeon 8500 128MB videocard.

Does all of this sound too good to be true? Well, there are two gotchas. First, most of the skins available for *WindowBlinds* are created by amateurs, and it shows. We tested many top-rated skins from **www.wincustomize.com**, a popular skin repository, and although we stumbled across a few gems, the vast majority of the skins we found were downright garish. Sadly, as we were writing this article, a particularly stylin' skin that impeccably imitated Vista's Aero Glass UI was removed by its author on Microsoft's request.

The other major catch of *WindowBlinds* is that, like any low-level OS modification, it has the potential to screw up your system. Our own experience was positive, but we've heard of cases in which *WindowBlinds* caused problems ranging from sporadic program crashes to the corruption of Windows XP's icon files. As such, we understand that many folks won't be comfortable installing such an invasive program.

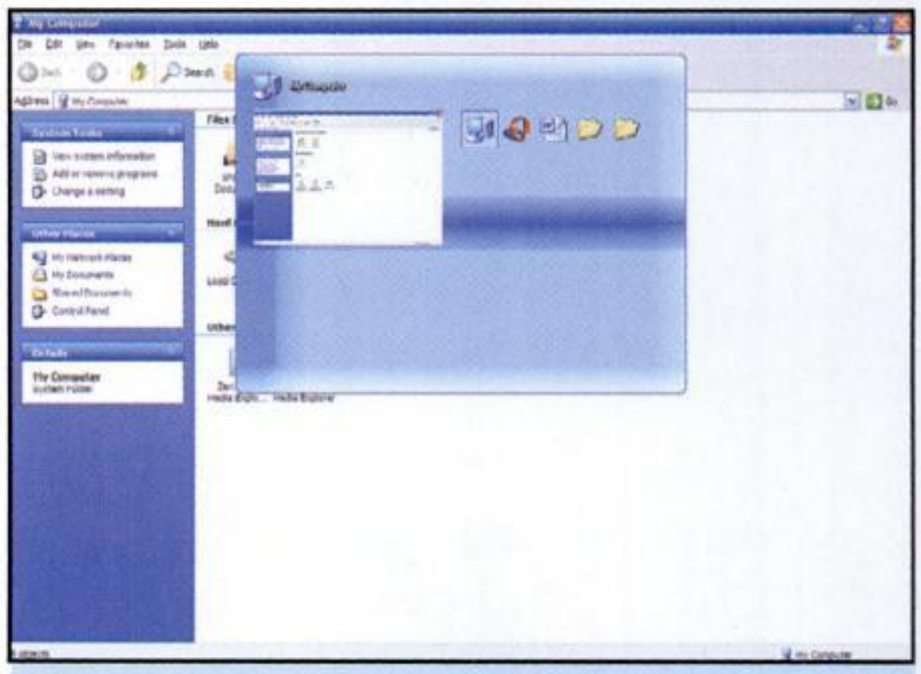
If that describes you, you can still make Windows XP look a bit more modern. When Microsoft shipped Windows XP Media Center Edition 2005, it served up a new theme called Royale, which has since been made available (for free) to all Windows XP users. Royale is essentially a sleeker, more contemporary version of the Luna theme. Because it's made by Microsoft, it's a safe choice for those who don't want to mess with third-party window managers. To get it, head over to **www.microsoft.com** and search for "Royale"; it should come up under the title "Desktop Backgrounds for Windows."

It's worth noting that aesthetics and productivity sometimes go hand-in-hand. An example of this is the venerable Alt-Tab feature, which by default simply displays a list of icons representing the programs you have running. Alt-Tab is handy as it is, but wouldn't it be even better to see a small snapshot of each program, so you could easily choose between the six instant messaging windows you have open? We sure think so. Luckily, the *Alt-Tab Replacement PowerToy* (visit **www.microsoft.com** and search for "powertoys") does exactly that. It's not quite the same as the Mac's Exposé feature or the Flip 3D view of Windows Vista, but it's definitely an improvement. MPC

Keep the holiday spirit alive all year long with a *WindowBlinds* Christmas desktop theme.

Microsoft's Royale theme for Windows XP is a slightly sleeker and more modern take on the Luna theme.

Tired of Windows XP's bubbly UI? A chic black desktop theme might be just what you need.



The Alt-Tab Replacement PowerToy improves both the form and function of Windows XP, with handy previews of the windows you have open.

CALL IT A FRIENDLY GATHERING...

...a cheery online battle with a few of your closest pals. You hunt down a few terrorists, blow off some heads with your sniper rifle, and use night vision to stalk each other in the dark. In the world of Rainbow Six, only one rule of friendship applies: watch your back if you want to get out alive.

Optimized for the PC with enhanced graphics, unnerving AI, and classic, pulse-pounding close-quarter battles.

Featuring new cutting-edge technology like motion sensors, surveillance PDAs and 42 customizable weapons.

The total multiplayer experience, including signature Co-op and Deathmatch modes, plus the all-new "class-based" mode.

Tom Clancy's

RAINBOW SIX LOCKDOWN™

MATURE 17+ M CONTENT RATED BY ESRB — Blood, Language, Violence

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Clean Up Your PC **In Just One Hour**

Optimize your system and improve its performance by clearing up the clutter. Paul Townsend gets busy...

Even now, with the availability of massive hard disks, it's still possible to run short of space. The answer is a regular maintenance routine that involves going through your system with a fine-tooth comb and removing those files, photos, and videos that have become surplus to requirements.

The benefits of a major cleanup will be two-fold: you'll find yourself with more space to work with, and the performance of your system will improve immensely. Having cleaned up your PC, it's important to defragment your hard disk afterward. With files being deleted and moved, blocks of data can become scattered across your disk, which will slow down disk seek times. Running Disk Defragmenter will enable you to re-sort your data. Work through all 20 tips and not only will you have a cleaner PC, but it'll be faster, too.

Better organization and improved file management on your part will reduce the amount of work necessary in the future. For now, sit back and read through our essential advice on cleaning up your PC.

BY PAUL **TOWNSEND**

Add or Remove Programs
Change or Remove Programs
Add New Programs
Add/Remove Windows Components
Set Program Access and Defaults
Currently installed programs:
Show updates
Sort by: Name
Adobe InDesign CS
Size 189.00MB
Click here for support information.
Used rarely
Last Used On 05/07/2005
To change this program or remove it from your computer, click Change/Remove.
Change/Remove
Adobe Photoshop 7.0 Size 136.00MB
Adobe Reader 6.0.1 Size 44.12MB
ATI - Software Uninstall Utility Size 0.11MB
ATI Control Panel Size 15.72MB
ATI Display Driver
avast! Antivirus Size 41.38MB
Belkin F5U249 Driver and Icon Size 0.05MB
Broadcom Advanced Control Suite 2 Size 2.23MB
Broadcom Gigabit Integrated Controller Size 0.52MB
Corel Photobook Size 100.00MB
Creative DVD Audio Plugin for Audigy Series Size 0.10MB
Creative Jukebox Driver Size 26.71MB
Creative NOMAD Jukebox Zen Xtra Size 5.48MB
Cricket 2004 Size 1,018.00MB

1 Old Programs

When embarking on your clean-up campaign, it's always a good idea to begin by removing applications that you no longer use: They'll be taking up hard-disk space and in some cases will be affecting start-up performance as well. In Add or Remove Programs, click the "Sort by" drop-down for some help in determining what should stay and what should go. You can sort the list of installed applications by "Frequency of Use" and "Date Last Used." Using this information, you can make an informed decision about what to uninstall.

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2 Windows Components

You can streamline Windows XP and remove aspects of the OS that are never used. In Add or Remove Programs, click Add/Remove Windows Components and you'll see a list of installed components. To remove an item, clear the check box, but exercise caution — highlight each component first, then click Details to see exactly what the item consists of.

For example, Accessories and Utilities contains useful items such as the MS Paint tool, Calculator, and Clipboard Viewer. However, at the same time it's also home to games such as *Solitaire* and *Minesweeper*. Therefore, don't delete a component category until you know what's contained within it. As you scroll down the list of components, you'll see items such as Windows Media Player and Windows Messenger. If you uncheck the boxes next to these items, all you'll do is remove shortcut links from the desktop and Start menu, rather than uninstall them completely.

3 Hidden Items

A full uninstall facility for certain built-in applications is deliberately excluded from Add or Remove Programs to prevent the inexperienced user from removing them by accident. If you prefer, you can make a slight change to a system file and have them all displayed. To do this, open My Computer and locate C:\Windows\inf\sysoc.inf. Double-click the file to open it and you'll see a long list of items. Alongside some of the program names will be the word "hide," which prevents them from being seem. To make hidden items visible in Add or Remove Programs, delete the word "hide" next to each item and save the changes to the sysoc.inf file.

4 Clean Your Disk

To help you clear the clutter from Windows XP, use the Disk Cleanup tool. Right-click C: in My Computer and choose Properties > Disk Cleanup. Wait while the drive is examined and the amount of space that can be freed up is calculated. At the end of the analysis, different areas of Windows XP will be listed along with the amount of space that can be reclaimed by deleting their corresponding files.

5 Delete Program Files

Even after you've uninstalled an application, most of them leave their folders behind in the Program Files directory. In most cases this is deliberate, as the data left behind can retain information about you and your system. Then, if you subsequently reinstall the program, this folder will personalize the installation accordingly.

Browse your Program Files folder using My Computer and compare it with the list of applications displayed in the Add or Remove Programs list. You'll be surprised when you see how many folders are still left in the directory. Right-click and delete those that you're sure you don't need.

6 Recovery and Deletion

You'd be forgiven for thinking that after you've emptied the Recycle Bin the files inside have been deleted permanently. However, that's not the case, and by using a utility such as *PC Inspector File Recovery* (www.pcinspector.de/file_recovery/UK/welcome.htm), it's possible to retrieve items that have been deleted previously. If you want to ensure that deleted files aren't recoverable, then use a program such as *Eraser* (www.heidi.ie/eraser/).

7 Full Removal

Application uninstalls don't always go as they should, and when they fail, files can be left behind. You may also find that an Add or Remove Programs entry remains in the list and can't be deleted. To remove it, you'll need to use the Registry Editor. Go along to HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Uninstall. Here you'll see that there's a separate sub key for each of the applications that appears in Add or Remove. Locate the key that corresponds to the program you want to remove, then right-click it and choose Delete.

8 Spyware Removal

Leave no stone unturned when it comes to cleaning your PC. Windows XP users can deal with spyware by installing Microsoft Windows AntiSpyware, available free from www.microsoft.com/athome/security/spyware/software/default.mspx. Not only will this scan your PC for infection, but it also comes with a real-time monitor that provides constant protection.

9 Old User Accounts

Don't forget to deal with all the files and folders left behind by users that no longer have access to your PC. Open User Accounts in Control Panel and then select each old account. Click "Delete the account" > Delete Files.

10 System Restore Settings

A quick way of freeing up disk space is to reduce how much of it is being used by the System Restore utility. Open System in Control Panel and then select the System Restore tab. Select each drive, then click Settings and adjust the slider so that less disk space is used. This also has the effect of reducing the number of restore points that can be created.

11 A Fresh Start

Some apps on your PC will be configured to run at the same time Windows starts up. You can improve performance in an instant by using the System Configuration Utility to prevent this from happening. Click Start > Run, type *msconfig* and press [Return]. Select the Startup tab and clear the checkbox of those items you don't want to start.

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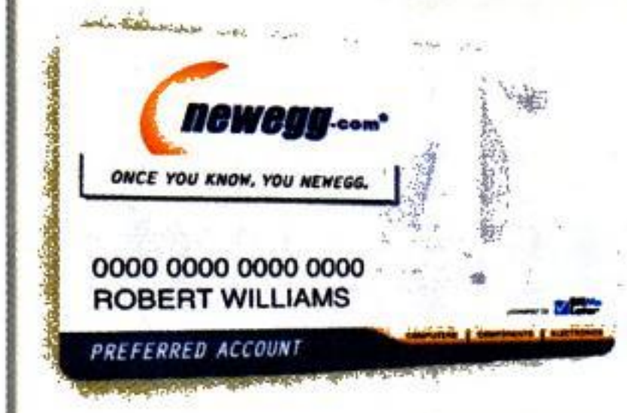

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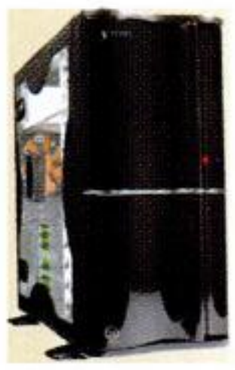

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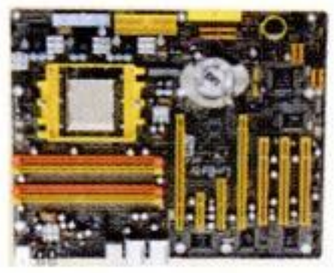

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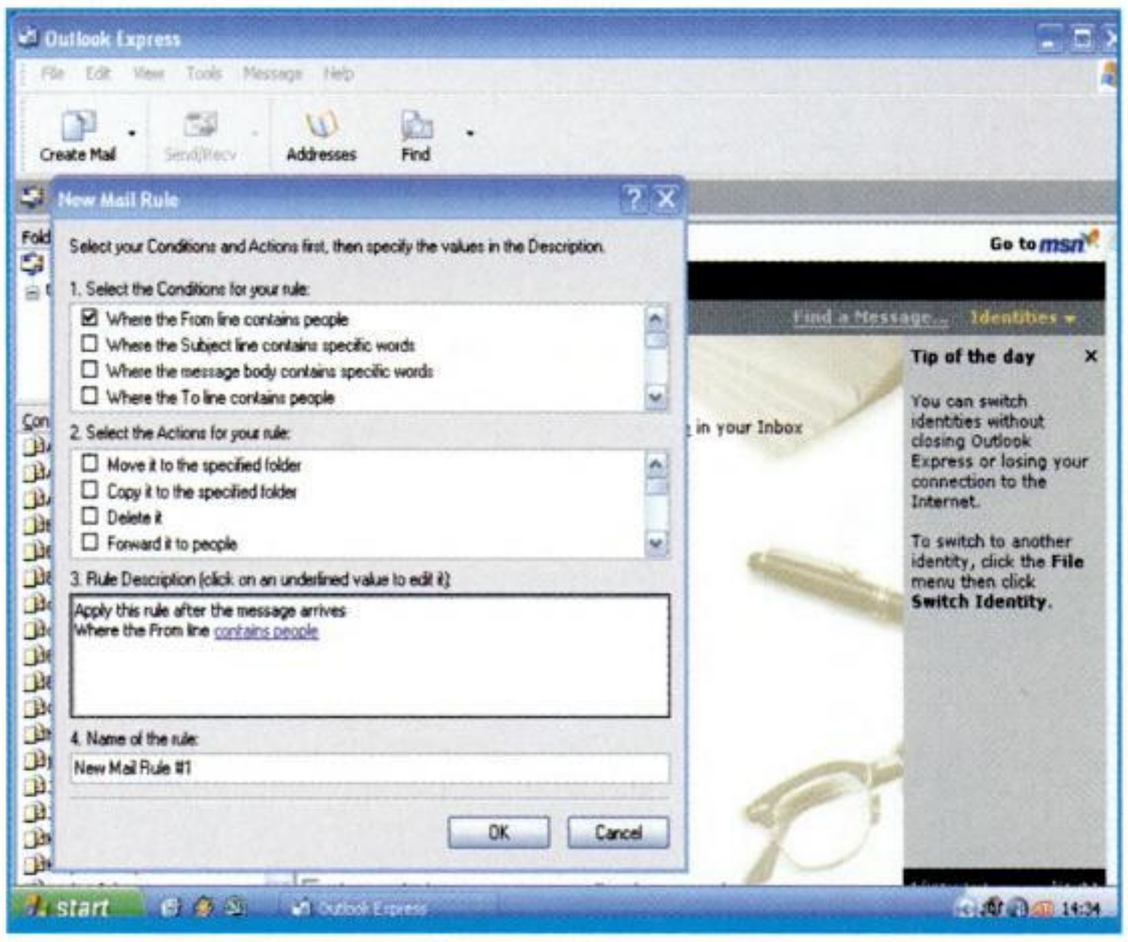
Outlook Express
File Edit View Tools Message Help
Create Mail
Send/Recv
Addresses
Find
New Mail Rule
Select your Conditions and Actions first, then specify the values in the Description.
1. Select the Conditions for your rule:
Where the From line contains people
Where the Subject line contains specific words
Where the message body contains specific words
Where the To line contains people
2. Select the Actions for your rule:
Move it to the specified folder
Copy it to the specified folder
Delete it
Forward it to people
3. Rule Description (click on an underlined value to edit it):
Apply this rule after the message arrives
Where the From line contains people
4. Name of the rule:
New Mail Rule #1
OK
Cancel
Go to msn
Find a Message...
Identities
in your Inbox
Tip of the day
You can switch identities without closing Outlook Express or losing your connection to the Internet.
To switch to another identity, click the File menu then click Switch Identity.
start
Outlook Express
14:34

16 Services Sorted

Hidden from view and working away in the background are various processes known as *services*. They perform different tasks and ensure that your hardware and software carry out specific functions. Press Ctrl + Alt + Del to launch the Windows Task Manager and select the Processes tab to see a snapshot of the services that are running. Not all of them will be necessary, and part of your cleanup process can involve stopping those services that you don't need.

Click Start > Run, type *services.msc* and press Return. The right pane lists all services along with their current status. Right-click a service, choose Properties, and check the Dependencies tab before stopping it. Exercise caution here and stop one service at a time to see how your system is affected.

12 Email Cleanup 1

Another way of cleaning up your Inbox and message folders is to create rules and locate your unwanted messages automatically. You can then move all the items into their own folder for deletion. In Outlook Express, click Tools > Message Rules > Mail. Set the Conditions for your rule — for example, all messages from a particular sender — and then choose the action that's to be taken. Such an action would be to delete it or move it to a specific folder. Then click Apply Now.

13 Manual Search

Even the Disk Cleanup tool won't locate all the unnecessary files on your system. Use the Search tool as well to pinpoint specific file types and delete them manually. In the "All or part of the filename" field, enter the extension of the file you want to find — for example, .mp3 — and then click Search.

14 Internet Cleanup

***Internet Explorer* does a good job of tracking and recording your activity on the web. Your reasons for removing this information may be two-fold: not only to free up disk space, but also as a way of maintaining your privacy. Open Internet Options in Control Panel Internet cleanup and then, under Temporary Internet Files, click Delete Cookies and Delete Files. You can also click Clear History to remove details of the URLs that have been visited.**

15 Email Cleanup 2

Your email messages and their attachments can take up an inordinate amount of storage space on your system. Use the column headings in message folders to assist you when sorting through your email and deciding which items can be deleted. In *Outlook Express*, even if you delete messages and they're no longer visible, they still remain on your PC. To ensure that they're deleted completely, click File > Folder > Compact All Folders.

17 Archiving

You can free up hard disk space by archiving important files that aren't accessed particularly often. Windows XP comes complete with its own back-up utility. It's already installed if you have the Professional Edition, but for those with Home Edition, you'll need your original CD. Browse the disc and go to VALUEADD\MSFT\NTBACKUP. Double-click NTBACKUP.MSI to begin the installation. There's one drawback with this utility — it doesn't enable you to back up directly to CD by default. However, if you install InCD from Nero first (ftp://ftp.nero.com/software/InCD), then recording to CD will be possible.

18 Windows Support Tools

Windows XP Service Pack 2 Support Tools are available as a free download from www.microsoft.com/downloads. They contain a number of useful utilities that help with the day-to-day maintenance of your system. One of these in particular, the Windows Installer Cleanup Utility, helps you remove all the file remnants left behind by an uninstallation that's failed. Locate msciuu.exe in the Support Tools folder and then double-click it. All the applications that have been installed with the Windows Installer will be listed. Select the item you wish to fully delete and then click Remove. **(See sidebar, page 46.)**

19 The Last Resort

The ultimate system cleanup would be to clear your drive completely of any data and then start again by reinstalling the Operating System. It's a drastic step, but it'll enable you to start afresh. Remember to back up your important data before you begin. Start your PC with the Windows CD in the drive and then, from the menu that appears, select "To set up Windows XP." Choose the partition where Windows XP is to be installed — usually the C: partition. Don't worry if you see a prompt saying that the partition already contains an Operating System because on the next screen you'll format it. Press C to continue. The larger your hard drive partition, the longer this aspect of the process will take. Once the formatting is complete, you'll be able to proceed with the installation of Windows.

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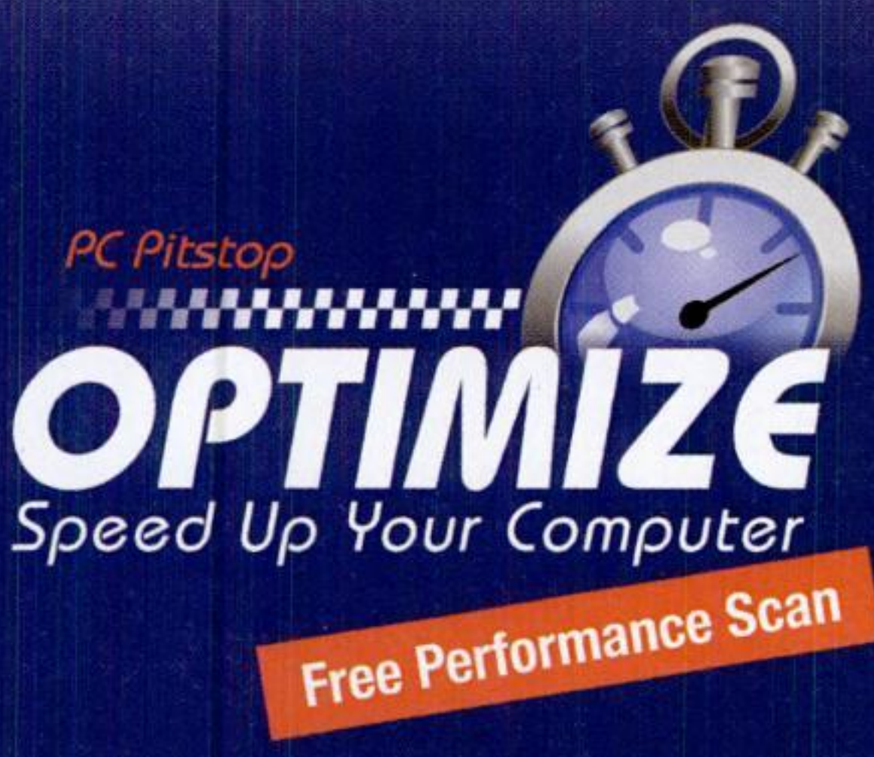


Over time, everyday use will diminish your PC's performance. Optimize is an exciting software program that will automatically diagnose your PC and give you a custom report detailing every issue that is hurting your PC's performance.

- **Energize Internet Speeds**

  Improve your Internet connection up to 200% by adjusting Windows Internet settings based on your connection type.

- **Revitalize System Performance**

  Increase your system performance by tweaking several critical Windows settings.

- **Eliminate Registry Errors**

  Remove erroneous and leftover registry entries created by viruses, spyware, and incorrect program removal.

- **Maximize Hard Drive Space**

  Find and remove unnecessary and temporary files, making your drive run even faster.

Also Try Our Free Privacy Scan

Many people are astounded about the amount of personal information Windows stores as you surf the web and work on your PC. Try our free privacy scan to see what secrets Windows may reveal about you.

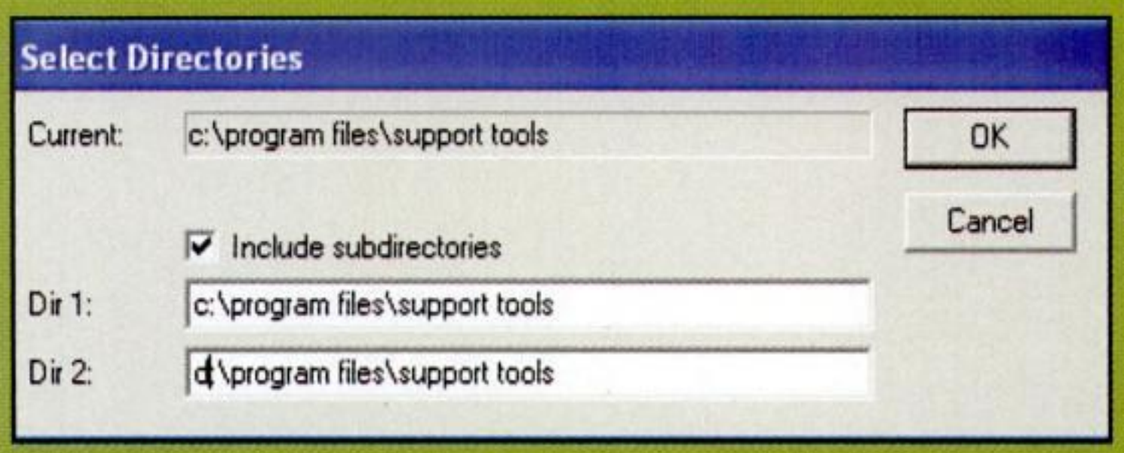
- **Learn about your PC's privacy issues**

PCPitstop.com/Max

20 Desktop Maintenance

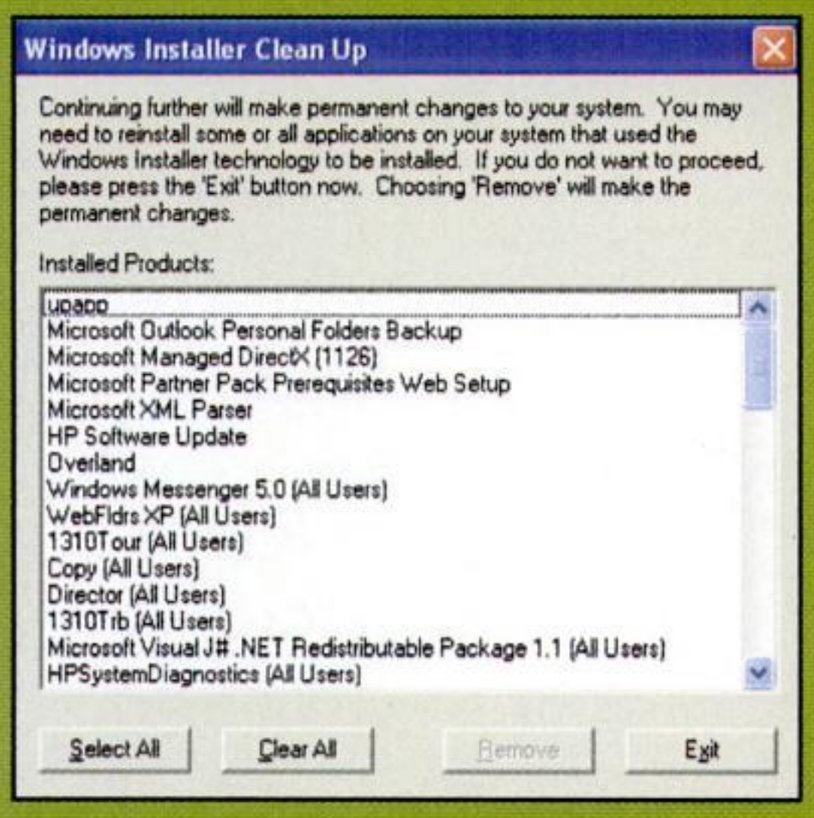
Keeping the desktop clear of unwanted items will make it an easier place to work in. For example, clear the list of recently opened documents that appears on the Start menu by right-clicking the Start button and choosing Properties. Click Customize > Programs > Clear List. Don't let the desktop become overrun with unused file shortcuts: right-click it and choose Arrange Icons By > Run Desktop Cleanup Wizard. This will identify shortcuts that aren't used any more. MPC

How to clean up your hard drive using the Windows Support Tools



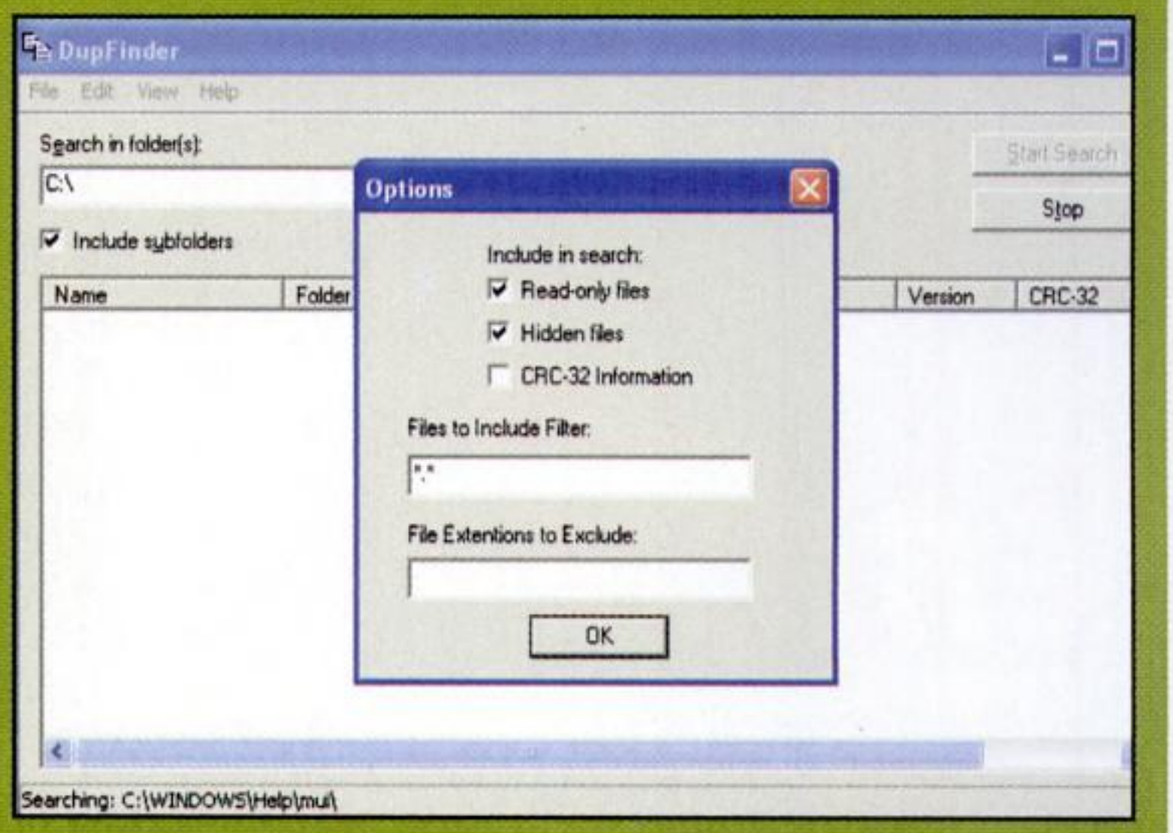
1

Use this utility to compare two files with the same name or two directories. After seeing the differences, you can decide which one is to be deleted. Click File > Compare Files and open both files to see a comparison.


Windows Installer Clean Up
Continuing further will make permanent changes to your system. You may need to reinstall some or all applications on your system that used the Windows Installer technology to be installed. If you do not want to proceed, please press the 'Exit' button now. Choosing 'Remove' will make the permanent changes.
Installed Products:
upapp
Microsoft Outlook Personal Folders Backup
Microsoft Managed DirectX (1126)
Microsoft Partner Pack Prerequisites Web Setup
Microsoft XML Parser
HP Software Update
Overland
Windows Messenger 5.0 (All Users)
WebFldrs XP (All Users)
1310Tour (All Users)
Copy (All Users)
Director (All Users)
1310Trb (All Users)
Microsoft Visual J# .NET Redistributable Package 1.1 (All Users)
HPSystemDiagnostics (All Users)
Select All
Clear All
Remove
Exit

2

To use this tool, the application that you want to remove must have been installed using the Windows Installer. Even if it has been partially removed, msicuu.exe will get rid of all remaining items, including Registry entries.



3

When cleaning up your hard disk, this utility will track down duplicate files. Windows XP requires some files to be in multiple locations, so exercise caution before deleting anything: send items to the Recycle Bin first.

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SQUASH all YOUR PC BUGS

Your computer is vulnerable to a whole host of viruses, spyware, Trojans, and other unpleasant programs. We'll show you how to purge Internet nasties from your computer, and then keep them out once and for all!

BY CHRISTOPHER NULL

As you read these words, your PC is under attack. Whoops, there's another invader. And another.

Computer insecurity statistics today are truly frightening. One study says 80 percent of users have some form of spyware on their system. Roughly 3,200 viruses are currently "in the wild" and active. According to some experiments, a Windows XP Service Pack 1 computer can be compromised and turned into a zombie within four minutes of being plugged into a standard broadband connection.

Those are grim figures, but you're not helpless in this fight. Today's security tools are more sophisticated than ever. Combine them with some old-fashioned good judgment and you'll be protected in no time.

But what if you do get infected, despite your best efforts? We've got you covered there, too. Neither virus scanners nor spyware killers are 100 percent effective, and it takes a little specialized know-how to cure what ails you.

This guide will show you, step by step, how to become the security expert that every *Maximum PC* reader ought to be. Here's how to configure your firewall, from basic setup to custom rule creation; how to set up your antivirus software and remove any lingering infections; and what tools to turn to when spyware finally hunts you down.

We've capped it all off with a little "best practices" discussion, a guide to common sense computing that we've never put into one article but should have years ago.

ILLUSTRATION BY OLIVER WOLFSON

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CONFIGURE YOUR FIREWALL LIKE AN EXPERT

A good firewall is always the first line of defense against attack. And trust us, you have to have one if you're connected to the Internet by any method, be it wireless, broadband, or rinky-dink modem.

While many security threats can be prevented with good behavior and common sense, such tactics won't ward off TCP/IP-based attacks. That's because, like it or not, every IP address is bombarded, constantly, with automated attacks hoping to turn your computer into a zombified mess. Hordes of infected computers (possibly numbering in the millions) do nothing but send out probes and active attacks to random IP addresses, day and night. At their most harmless, these are simple denial-of-service (DOS) attacks designed to crash your machine or slow down your Internet connection. At their worst, these probes find unprotected PCs on which to automatically install spyware and other malware, turning them into a major security risk and another member of the online zombie army!

And yet many users dread the firewall, with its acronym-filled configuration screen and documentation seemingly geared toward experts. Fear not the firewall, dear reader. The firewall is your friend, and we're here to show you how you can have an expert rig deployed in mere minutes.

FIREWALL OPTIONS

The good news is that you probably already have a firewall up and running, even if you don't know it. You'll find a firewall in one or more of these locations:

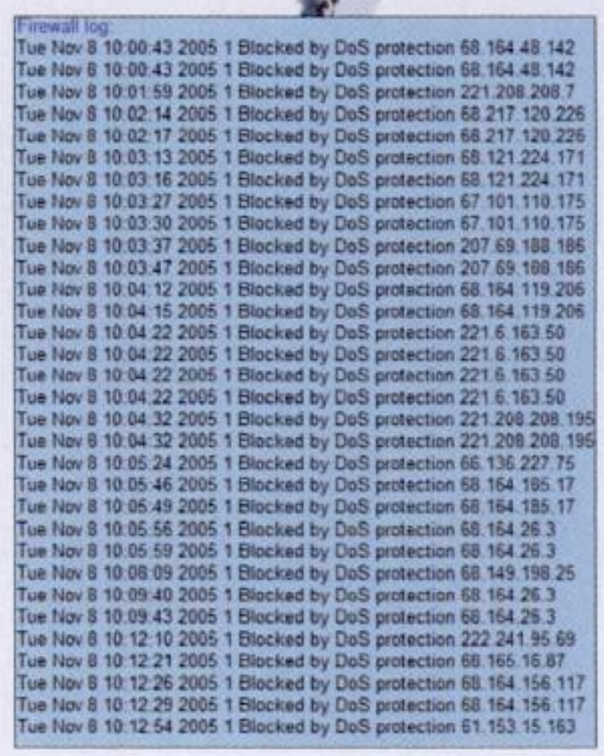
►**YOUR ROUTER.** If you have any kind of networking equipment installed, it's probably a router, and it almost certainly has a firewall inside it, turned on by default. Note that your cable or DSL modem is *not* a router and does not have any security firmware. As well, a simple hub, switch, or wireless access point will not contain security code.

►**ANY WINDOWS XP SERVICE PACK 2 COMPUTER.** The Windows firewall is on by default, but only if you're patched to SP2. Configurability is limited, though, and power users will want to consider another option like:

►**THIRD-PARTY FIREWALLS.** If you don't have a router-based firewall, definitely consider investing in a firewall such as Zone Labs *ZoneAlarm Pro* (**www.zonelabs.com**), which you'll find far more powerful than the vanilla XP firewall.

BASIC CONFIGURATION

No matter what type of firewall you choose, all are painless to set up initially. Unlike the complicated firewalls of yore, modern 'walls are preconfigured with the most common set of "rules" already in place. A rule specifically allows or denies traffic on a certain TCP or UDP port. Firewall coders know that you're going to want TCP ports 80, 25, and 20 open, because you probably want access to the web, email, and FTP services. But what about port 1375, used by Bytex enterprise equipment? Probably not. It's blocked by default.


Firewall log:
Tue Nov 8 10:00:43 2005 1 Blocked by DoS protection 68.164.48.142
Tue Nov 8 10:00:43 2005 1 Blocked by DoS protection 68.164.48.142
Tue Nov 8 10:01:59 2005 1 Blocked by DoS protection 221.208.208.7
Tue Nov 8 10:02:14 2005 1 Blocked by DoS protection 68.217.120.226
Tue Nov 8 10:02:17 2005 1 Blocked by DoS protection 68.217.120.226
Tue Nov 8 10:03:13 2005 1 Blocked by DoS protection 68.121.224.171
Tue Nov 8 10:03:16 2005 1 Blocked by DoS protection 68.121.224.171
Tue Nov 8 10:03:27 2005 1 Blocked by DoS protection 67.101.110.175
Tue Nov 8 10:03:30 2005 1 Blocked by DoS protection 67.101.110.175
Tue Nov 8 10:03:37 2005 1 Blocked by DoS protection 207.69.188.186
Tue Nov 8 10:03:47 2005 1 Blocked by DoS protection 207.69.188.186
Tue Nov 8 10:04:12 2005 1 Blocked by DoS protection 68.164.119.206
Tue Nov 8 10:04:15 2005 1 Blocked by DoS protection 68.164.119.206
Tue Nov 8 10:04:22 2005 1 Blocked by DoS protection 221.6.163.50
Tue Nov 8 10:04:22 2005 1 Blocked by DoS protection 221.6.163.50
Tue Nov 8 10:04:22 2005 1 Blocked by DoS protection 221.6.163.50
Tue Nov 8 10:04:22 2005 1 Blocked by DoS protection 221.6.163.50
Tue Nov 8 10:04:32 2005 1 Blocked by DoS protection 221.208.208.195
Tue Nov 8 10:04:32 2005 1 Blocked by DoS protection 221.208.208.195
Tue Nov 8 10:05:24 2005 1 Blocked by DoS protection 66.136.227.75
Tue Nov 8 10:05:46 2005 1 Blocked by DoS protection 68.164.185.17
Tue Nov 8 10:05:49 2005 1 Blocked by DoS protection 68.164.185.17
Tue Nov 8 10:05:56 2005 1 Blocked by DoS protection 68.164.26.3
Tue Nov 8 10:05:59 2005 1 Blocked by DoS protection 68.164.26.3
Tue Nov 8 10:06:09 2005 1 Blocked by DoS protection 68.149.198.25
Tue Nov 8 10:09:40 2005 1 Blocked by DoS protection 68.164.26.3
Tue Nov 8 10:09:43 2005 1 Blocked by DoS protection 68.164.26.3
Tue Nov 8 10:12:10 2005 1 Blocked by DoS protection 222.241.95.69
Tue Nov 8 10:12:21 2005 1 Blocked by DoS protection 68.165.16.87
Tue Nov 8 10:12:26 2005 1 Blocked by DoS protection 68.164.156.117
Tue Nov 8 10:12:29 2005 1 Blocked by DoS protection 68.164.156.117
Tue Nov 8 10:12:54 2005 1 Blocked by DoS protection 61.153.15.163

A firewall log fil shows 32 malicious attacks in the space of 12 minutes.

Installing a router or Windows firewall is literally as simple as turning it on. But setting up a tool like *ZoneAlarm* (our favorite firewall) requires a little more attention.

When you first install *ZoneAlarm*, you'll be asked whether you want to use its SmartDefense Advisor, which examines incoming and outgoing traffic and decides whether it's malicious. *ZoneAlarm* can't possibly know what network games you want to play or what P2P apps you prefer, so set it to Manual, which gives you control over what is blocked.

After installation, you'll suddenly receive a number of alerts about your PC, including some marked as "dangerous behavior."

IS IT REALLY DANGEROUS?

Security applications can be overzealous in their opinion of what constitutes a threat, so before you start blocking all inbound and outbound traffic, do a reality check. If you receive a message like the one on the right, Google the specific application (spoolsv.exe, in this case) and see what comes up. Doing so, we found that this application is the Windows spooler service, probably the result of a networked printer being installed on the machine. If you're extra paranoid, you can check the IP address noted in the alert by typing it in at **http://ws.arin.net/whois**. In this case, the IP resolves to a legitimate ISP and doesn't really give us any additional information about it.

But malware authors are crafty: spoolsv.exe is used as the name of at least three different viruses, and if you find the executable outside the \Windows\System32 folder it probably is malicious. Likewise, if spoolsv.exe is consuming CPU cycles, it should probably be blocked and/or removed.

Also be on the lookout for hard-to-spot tricks: lsass.exe (with a lowercase L) is a Windows security application, while lsass.exe (with an uppercase I) is a serious virus called Optix.Pro. In the default Windows font, they look identical. Security apps would definitely spot Optix.Pro, but if you type an L instead of an I while doing research, you might be tempted to give it the OK. (Don't.)

Because there are tens of thousands of possible cases like this, it's impossible to make blanket rules about what's malicious and what's benign. The bottom line: Use your best judgment, and when in doubt, block it out.

ZoneAlarm Security Alert
NEW PROGRAM
Spooler SubSystem App is trying to access the Internet.
Identification: Identified
Application: spoolsv.exe
Destination IP: 38.113.220.17:DNS
View Properties
More Information Available:
This is the program's first attempt to access the Internet.
SmartDefense Advisor
More Info...
Recommendation: Select Remember this setting and click Allow.

Is spoolsv.exe malicious? Only Bill Gates knows for sure.

Copyrighted material

Don't panic. This is part of the configuration process, and many processes check the net frequently, such as Windows Update and anti-virus tools. (See "Is It REALLY Dangerous?" on the previous page to learn how to tell whether an alert is worth worrying about.) Bottom line: If you're upgrading from the Windows firewall or adding to your router's security (yes, two firewalls are better than one), these are probably not genuine risks.

Additional alerts will pop up from time to time. Again, treat them on a case-by-case basis.

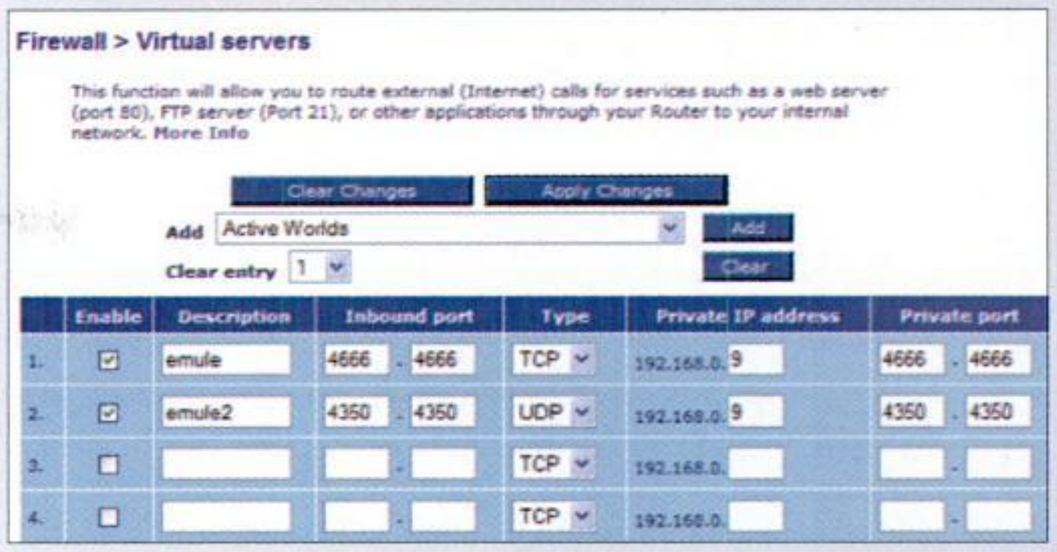
OPENING PORTS

Now that your firewall is installed, you might want to add network-enabled applications—that is, apps that can accept unsolicited traffic from the Internet. These apps are usually servers of some sort, either web-, FTP-, or game-related. With ZoneAlarm or the Windows Firewall, just launch the application. An alert will pop up, warning you that a new app is trying to access the Internet, giving you the option to allow or deny the connection. Allow it, and the firewall will reconfigure itself. (Note that this pop-up is usually underneath a game screen, so if you are having trouble, quit the app, allow the connection, and restart the game.)

With a router, it gets trickier, because these devices can't ask you whether the traffic is good or bad. This means you need to configure the router manually by opening the appropriate ports and pointing them to the computer on which the server software is running on.

First, find out what port numbers you need open by checking the software settings, help files, or online documentation. Next, give your machine a static IP address on your network (through the Network Connections control panel in Windows). You should use an unused address in the range your router doles out, usually 192.168.0.x, where x is a number between 2 and 255. Make a note of the IP address you use.

Armed with this information, configure open ports as needed. This process varies by router; check for tabs named Virtual Server, Firewall, or Port Redirection. Once located, simply enter the port numbers, the protocols used (UDP for games and TCP for data traffic), and the static IP address of the PC. All done!


Firewall > Virtual servers
This function will allow you to route external (Internet) calls for services such as a web server (port 80), FTP server (Port 21), or other applications through your Router to your internal network. More Info
Clear Changes
Apply Changes
Add Active Worlds
Add
Clear entry 1
Clear
Enable
Description
Inbound port
Type
Private IP address
Private port
1. emule 4666 - 4666 TCP 192.168.0.9 4666 - 4666
2. emule2 4350 - 4350 UDP 192.168.0.9 4350 - 4350
3. TCP 192.168.0.
4. TCP 192.168.0.

When setting up a custom port, use the same TCP and UDP numbers for the inbound and private ports.

KEY POINTS

DO use some kind of firewall, even if it's just the version built into Windows.

DON'T automatically assume that all network traffic is dangerous.

DO use multiple firewalls if you're concerned about net attacks.

DO configure custom ports for your networked applications and games.

DON'T mess with the DMZ, even though it sounds cool: It's for hardened servers only.

TEACH A MAN TO AVOID PHISH

As the latest scam to target unsuspecting computer users, phishing has become the lazy hacker's way to separate you from your eBay and PayPal passwords, your credit card numbers, your bank logins, and anything else where digital bucks are at stake. The game is simple: Forge an email that looks like it's from the real PayPal, but redirect any clicks to a spoof site. Once you type in your password, the crooks are quick to jump into your account and drain it of funds, often leaving you with little recourse, aside from a bottle of gin.

Phishing emails and websites have become extremely sophisticated in the last year or so, that even veteran users might not be able to tell the difference between real messages and fake ones.

Here's what you can you do to protect yourself!

► **INSTALL A GOOD SPAM FILTER.** Less crafty phishers won't properly spoof their messages, and spam filters will automatically delete them.

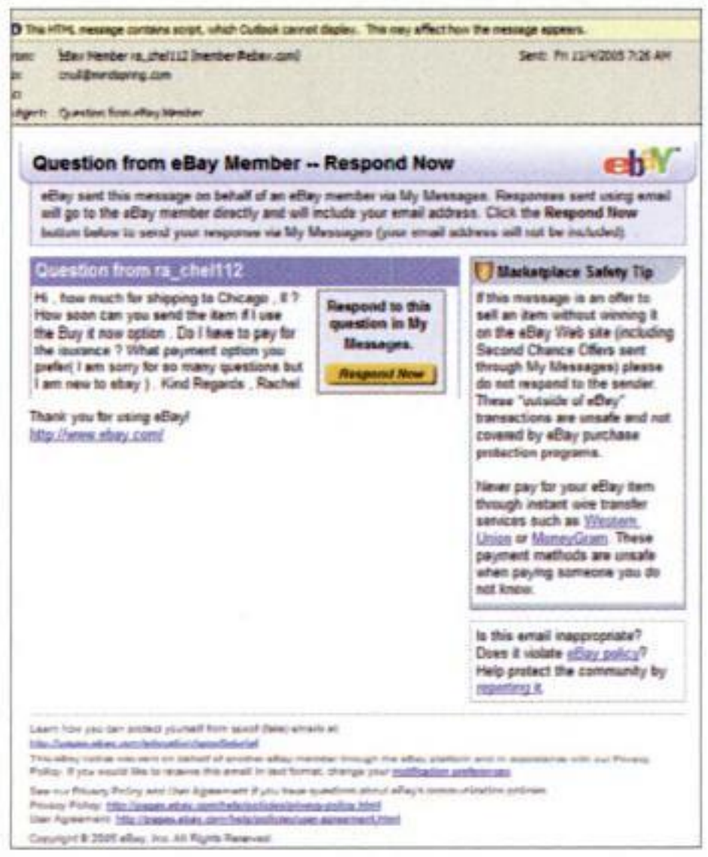
► **IGNORE ANYTHING WITH A TYPO OR BAD GRAMMAR.** Your bank wouldn't send you a note about "loosing your fanincial reccords." (If it does, get a new bank.)

► **CHECK THE MESSAGE HEADERS.** This used to be a reliable way to spot a scam, but spoofing has gotten to the point where most headers can be forged perfectly.

► **CUT AND PASTE.** Don't click directly on a hyperlink in an email message—ever. If the email includes a visible URL, cut and paste it into your browser instead of clicking it. (Even though the visible text says **www.wellsfargo.com**, the actual hyperlink may go to **www.dirtycrooksrus.com**.)

► **GO DIRECT.** If you get a message from PayPal about your account, just type **www.paypal.com** in your browser and log in directly. If the alert is real, it'll show up when you log in. There's no need—ever—to click a link in an email.

► **JUST DELETE IT.** If you're feeling lazy, ignore any email you get from any company you do business with. If it's really serious, they'll call you.


Question from eBay Member -- Respond Now
ebay
eBay sent this message on behalf of an eBay member via My Messages. Responses sent using email will go to the eBay member directly and will include your email address. Click the Respond Now button below to send your response via My Messages (your email address will not be included)
Question from ra_chell12
Hi , how much for shipping to Chicago , il ? How soon can you send the item if I use the Buy it now option . Do I have to pay for the isurance ? What payment option you prefer(I am sorry for so many questions but I am new to ebay) . Kind Regards . Rachel
Respond to this question in My Messages.
Respond Now
Thank you for using eBay!
http://www.ebay.com/
Marketplace Safety Tip
If this message is an offer to sell an item without winning it on the eBay Web site (including Second Chance Offers sent through My Messages) please do not respond to the sender. These "outside of eBay" transactions are unsafe and not covered by eBay purchase protection programs.
Never pay for your eBay item through instant wire transfer services such as Western Union or MoneyGram. These payment methods are unsafe when paying someone you do not know.
Is this email inappropriate? Does it violate eBay policy? Help protect the community by reporting it.

This phishing email is looks exactly like the real thing—it even offers a link to eBay's anti-phishing FAQ—and appears harmless because it doesn't ask for a password or alert you of faux danger. If you're selling something on eBay, it's extremely tempting to click the Respond Now link, which redirects you to a spoof site designed to steal your eBay password.

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SQUASH YOUR PC BUGS

NUKE VIRUSES EVERY TIME

First the good news: Antivirus software has come a long way since the days of ThunderBYTE and Virex. The bad news is that viruses have too, and they've become so wound up with Trojan horses, spyware, keyloggers, and other malware that there's no longer even agreement on what a virus is.

Regardless of semantics, when it comes to getting rid of a virus, the best offense is a good defense: Install a solid antivirus application as soon as you set up a new PC, download all program and virus-definition updates, and turn on automatic updates and weekly drive scans in the system settings. (Trying to remember to manually update your definitions once a week is a headache.)

Next, configure your settings for maximum security. Some scanners let you set a rough paranoia level—low, medium, or high—and the high security modes rarely interfere with necessary computer operations. Make sure you configure your scanner to check inside compressed files: Most viruses are now delivered within ZIP archives because Microsoft *Outlook* automatically hides executable attachments.

IF YOU'RE INFECTED

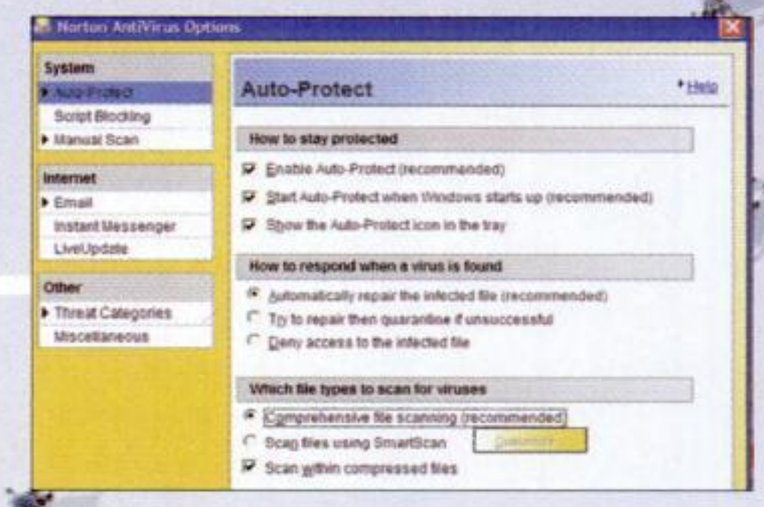
If, despite your best efforts, you become infected, virus removal can range from simple to nightmarish. Let your virus scanner try to clean the infection first, and boot into safe mode if you are having trouble running the app. Most antivirus programs also come with recovery CDs, and these can help in cases of extreme infection. The caveat: Virus definitions on these CDs are invariably out of date. Symantec's recovery disk can use the definitions on your hard drive (if they aren't corrupted), but this will only work if your definitions are up to date.

Some viruses can't be killed by off-the-shelf scanners, so you might have to resort to a specialized squasher, designed specifically to delete a certain class of virus. If you can ferret out the name of the virus you have (either through your antivirus software or by checking in the Task Manager), look online for a tool designed specifically for that infection. Most antivirus companies keep archives of removal tools, but these three are tops:

- **http://securityresponse.symantec.com/avcenter/tools.list.html**
- **http://www.kaspersky.com/removaltools**
- **http://vil.nai.com/vil/averttools.asp**

On some of these sites you'll also find beta DAT files and other helpful infection tools, in case you have a virus that no one has heard of yet.

If the scanner can't get it and there's no removal tool, you'll need to scrub the infection manually. Usually this means booting in safe mode and deleting the infected files, then editing the registry to remove traces of the infection. Instructions vary widely based on the virus, but a few minutes searching for the full name of the virus on Google will usually yield step-by-step instructions.



Most viruses come inside compressed files, so be sure to scan them.

KEY POINTS

DO install antivirus software as soon as humanly possible.

DO keep your definitions up to date with automatic updates.

DON'T assume that any file on your PC is automatically safe; many scanners won't check it until you attempt to open the file.

DO keep bookmarks of removal-tool web pages handy.

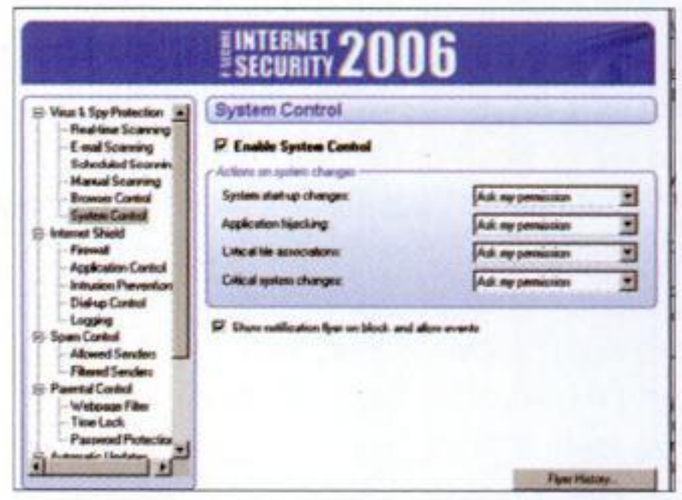
KEYLOGGERS, DIALERS, AND ROOTKITS

There exists a class of malware so horrible that most people have never even heard of it. What is all this stuff?

Keyloggers are designed to capture everything you type, the goal being to collect user names, passwords, and credit card numbers for transmission back to the lairs of evildoers. Most keyloggers are software, but hardware keyloggers, which attach between keyboard and PC, are also common. Spyware software will catch many keyloggers, but not all: Check your system using the free versions of *KL-Detector* (**http://dewasoft.com/privacy/kldetector.htm**) and *Anti-Keylogger* (**www.anti-keyloggers.com, trial version only**).

Dialers have been around for ages… and they're still with us. The goal of these little monstrosities is to make your modem dial expensive 900 or international toll numbers, use ridiculously overpriced third-party long distance services, and generally wreak havoc on your phone bill. The damage gets done late at night, so you don't know until a four-figure bill arrives in the mail. Consumers have had some luck getting these charges reversed (especially from third-party billers who can't shut off your phone), but a good defense is typically found in standard anti-spyware suites. (Stand-alone anti-dialer software really isn't worth the trouble.) The best defense, of course, is to simply get rid of your dialup modem.

Rootkits are the very worst of the bunch, comprising software that overwrites Windows system files with broken or malicious versions of the files, which turn your PC into a slave for the rootkit owner. Because they masquerade as legitimate files—in fact, deleting them outright would kill your PC—they are some of the most difficult malware apps to remove. Rootkits aren't fantasy: They were recently in the news when a rootkit was discovered lurking on some Sony audio CDs, crashing the machines that attempted to play them. Because they are so nefarious and deeply embedded in your OS, anti-rootkit software can be hit-or-miss. Sysinternals' *RootkitRevealer* (**www.sysinternals.com/utilities/rootkitrevealer.html**) is a savvy tool, and *F-Secure Internet Security 2006* (**www.f-secure.com/is/**) also includes a solid rootkit killer. Alas, many cases of rootkit infection require wiping the drive and starting from scratch.



***F-Secure Internet Security 2006* watches for system-level changes.**

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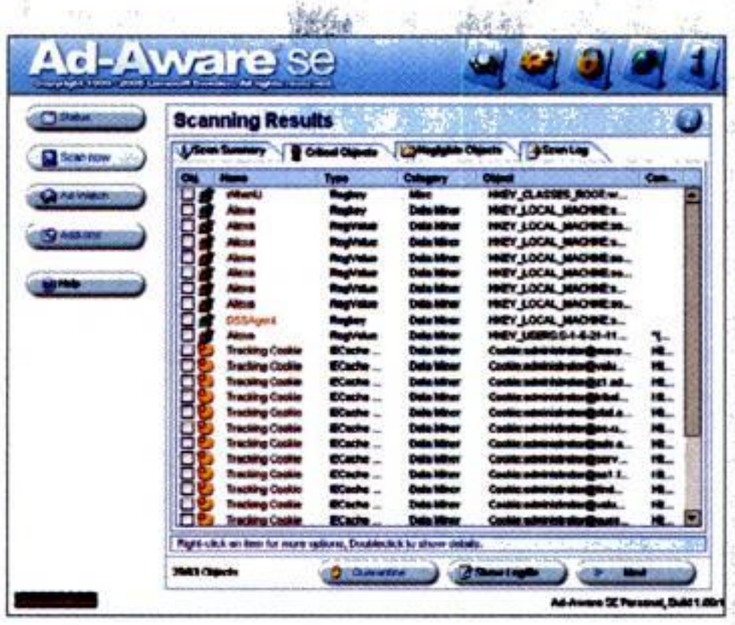
OUT SPYWARE LIKE IT'S VALERIE PLAME

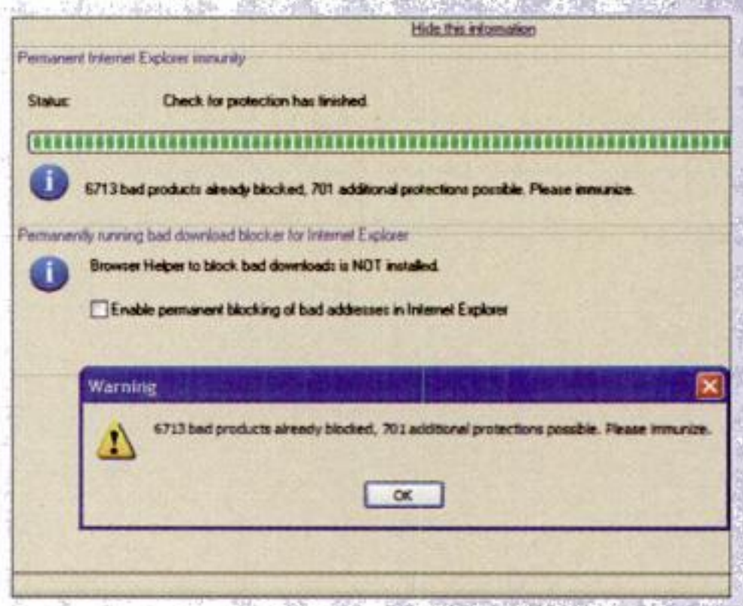
The line between spyware and virus is a blurry one, but never mind the lingo: It's a really bad line no matter where you draw it.

Spyware remains arguably the most active area of malware creation today. Because much of it can be delivered via the web (through exploits designed to take advantage of insecurity in web browsers, or by simply tricking you into clicking something you shouldn't), spyware infestations are incredibly common and exceptionally random. Though the industry is only a few years old, anti-spyware app *Spybot Search & Destroy* already includes more than 30,000 different spyware apps in its database.

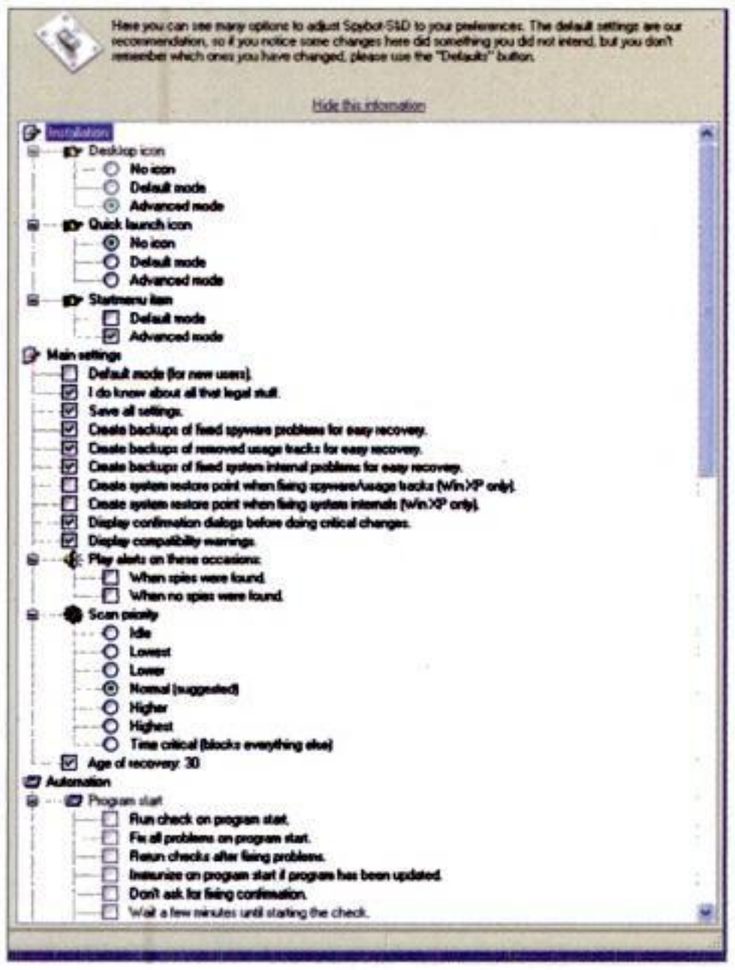
As with viruses, spyware can be easy to clean up or incredibly complex. The process for cleaning an infection is similar, with a few specific twists.



***Spybot* reports the system as clean, but *Ad-Aware* ferrets out 43 more infections.**


Hide this information
Permanent Internet Explorer immunity
Status: Check for protection has finished.
6713 bad products already blocked, 701 additional protections possible. Please immunize.
Permanently running bad download blocker for Internet Explorer
Browser Helper to block bad downloads is NOT installed.
Enable permanent blocking of bad addresses in Internet Explorer
Warning
6713 bad products already blocked, 701 additional protections possible. Please immunize.
OK

Take your medicine like a man: Immunization protects you from evil websites.


Here you can see many options to adjust Spybot-S&D to your preferences. The default settings are our recommendation, so if you notice some changes here did something you did not intend, but you don't remember which ones you have changed, please use the "Defaults" button.
Hide this information
Installation
Desktop icon
No icon
Default mode
Advanced mode
Quick launch icon
No icon
Default mode
Advanced mode
Startmenu item
Default mode
Advanced mode
Main settings
Default mode (for new users).
I do know about all that legal stuff.
Save all settings.
Create backups of fixed spyware problems for easy recovery.
Create backups of removed usage tracks for easy recovery.
Create backups of fixed system internal problems for easy recovery.
Create system restore point when fixing spyware/usage tracks (Win/XP only).
Create system restore point when fixing system internals (Win/XP only).
Display confirmation dialogs before doing critical changes.
Display compatibility warnings.
Play alerts on these occasions:
When spies were found.
When no spies were found.
Scan priority
Idle
Lowest
Lower
Normal (suggested)
Higher
Highest
Time critical (blocks everything else)
Age of recovery: 30
Automation
Program start
Run check on program start.
Fix all problems on program start.
Return checks after fixing problems.
Immunize on program start if program has been updated.
Don't ask for fixing confirmation.
Wait a few minutes until starting the check.

Make sure you enable advanced mode in *Spybot*. Basic is for losers.

RUN ALL YOU CAN

Because the pace of development in spyware is so frantic, and because different companies don't agree on what constitutes spyware, it's important to run several different applications if you suspect you have an infection.

Start with *Spybot Search & Destroy* (**www.safer-networking.org**). This free tool is the standard for anti-spyware software, and it does a generally great job of locating infections. The software isn't brainlessly intuitive, but it's simple enough to use.

First, put *Spybot* into Advanced mode via the Mode menu, then click the Update button to download the latest anti-spyware definitions. Run a full system scan with the Search & Destroy button. After you've cleaned out any infections, be sure to click the Immunize button. This modifies *Internet Explorer* and *Opera* by placing known spyware hosts in the Restricted Zone and making other useful tweaks.

When you're done with *Spybot*, run at least two other spyware scanners. *Ad-Aware* (**www.lavasoftusa.com**), *PestPatrol* (**www.pestpatrol.com**), and *Spy Sweeper* (**www.webroot.com**) all offer free or trial versions and are worth a quick install. Don't be surprised if all three find different infections. Also worth a look is Microsoft's new *Windows AntiSpyware* app (**www.microsoft.com/athome/security/spyware/software/**), currently in beta. It's free, and it can't hurt.

FOR THE SERIOUS INFECTION

Despite the cocktail of anti-spyware applications, chances are fair you'll still find yourself with a nagging infestation.

If so, you'll need to move to a more sophisticated tool. That tool is *HijackThis* (**www.spywareinfo.com/~merijn/**). *HijackThis* was designed to locate web browser hijacking software, but it's quite effective against any well-hidden or memory-resident application that you don't want running. Because it's designed for *severe* infections, it's not exactly simple to use. To the novice, the results page can by daunting, but don't fret. Simply save the log file, and paste it into the auto-analyzer at **http://hjt.iamnotageek.com**. You'll get an instant look at what's safe to keep, or safe to remove. If the analyzer doesn't help, go old-school and paste your log file at **http://forums.spywareinfo.com, http://boards.cexx.org**, or both. Help will usually arrive within a day or two in the form of someone who's experienced with your particular case. Be patient and polite.

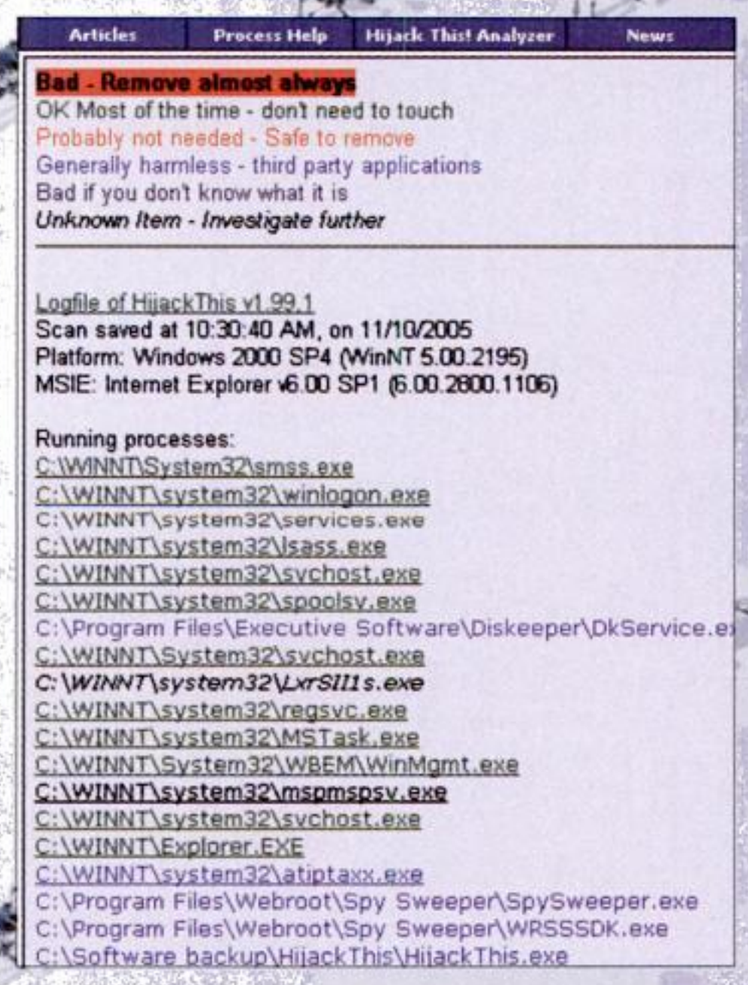
KEY POINTS

DO install as many anti-spyware applications as you can.

DON'T assume that one application's clean bill of health means an infestation is eradicated.

DO familiarize yourself with HijackThis *before* your PC is compromised.

DO make nice on the message boards—you need their help more than they need your bitching.



The online *HijackThis* analyzer gives you instant info on what processes are OK and what aren't.

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SQUASH YOUR PC BUGS

COMMON SENSE

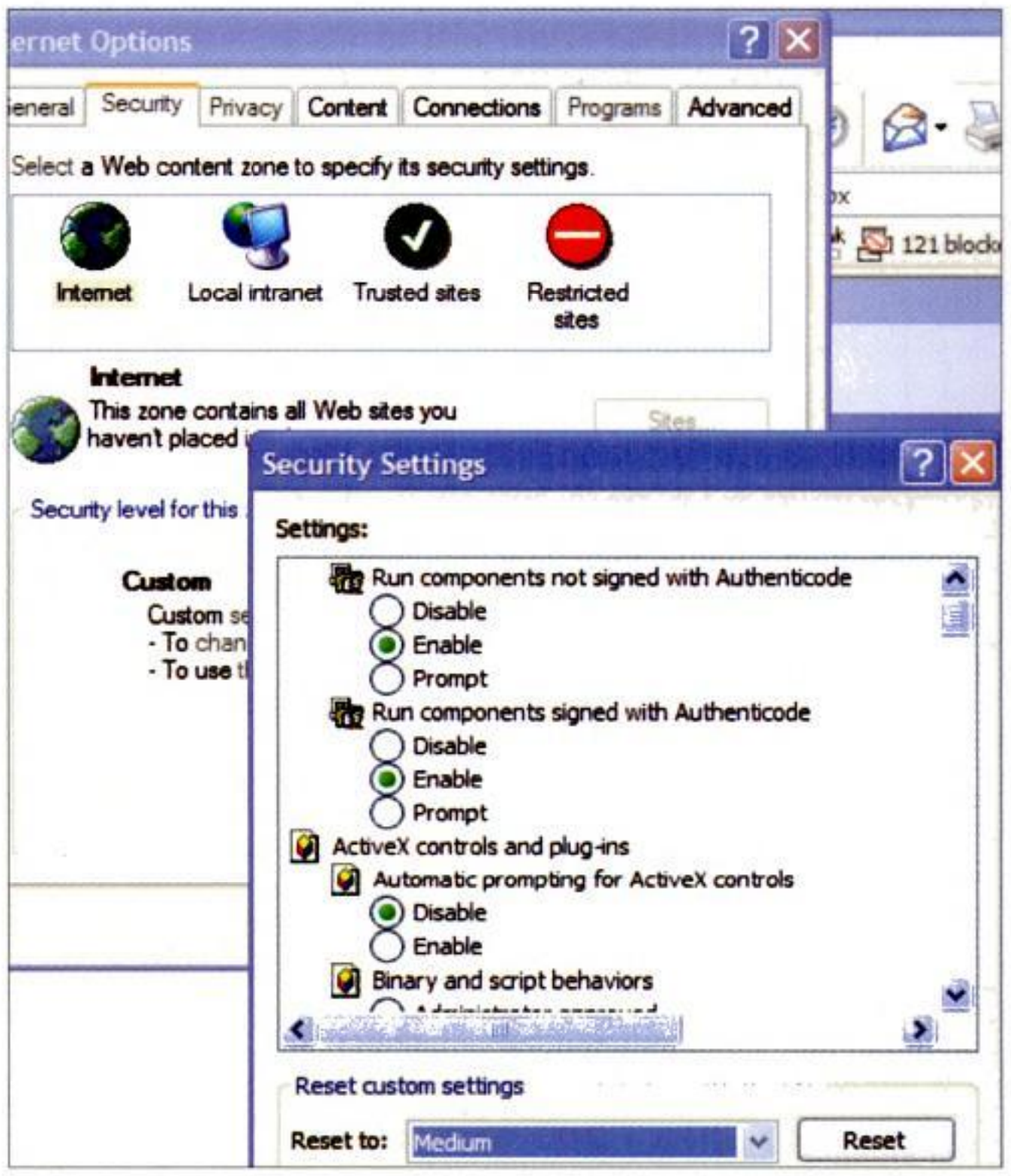
All this talk of viruses, spyware, and $1,000 phone bills may have you feeling a little nervous. That's not bad, because thoughtful caution and a little healthy paranoia are the most important things when it comes to keeping your PC malware-free.

We've had a PC running for the last two years without antivirus or spyware protection of any kind (though it is located behind a router-based firewall)—a scan today shows it to be as squeaky-clean as the day it was first turned on. The only protection this rig had was old-fashioned common sense.

To wit, here are *Maximum PC's* guidelines for safe computing. Follow them even if you've got the best malware protection on earth. Or else!

1 DON'T TRUST NOBODY! AND DON'T CLICK NUTHIN'!

Specifically we're talking about the web. All it takes is one misplaced click to install a spyware application on your machine, especially if you use *Internet Explorer.* One click, not the series of dialog boxes and "Are you sure?" messages you might expect. It can be a standard text link, image, Flash animation, anything. The most nefarious trick is that old standby, the pop-up advertisement. You've probably seen them, screens that look just like Windows error messages: "Your system may be vulnerable. Scan for spyware now?" Click OK and you won't be scanning for spyware, you'll be *installing* it. They even trick you through the closing of the ad. You'll often see two "x" close-window buttons in the right corner. Click the wrong one and you're actually clicking the ad (and installing malware), not whisking the ad away. How to deal with this? Foremost, stop pop-ups by enabling the pop-up blocker feature in your browser (all of them have this now), and installing the *Google Toolbar* (**http://toolbar.google.com**) for good measure. A few pop-ups will still trickle through. We recommend closing them by right-clicking their taskbar tab and clicking close (or Alt-F4). Then you don't risk accidentally clicking the ad.



Change the Medium security setting to High, to instantly beef up *Internet Explorer's* defenses.

2 BLOCK IMAGES IN YOUR EMAIL CLIENT

Most modern clients (and webmail apps) let you choose to keep images from loading in HTML emails you receive. This makes good sense, not just because clicking an image could launch a pop-up window (and thus a spyware install), but spam servers can log when images are received, even if you don't click them, thus verifying your email address is active.

3 DON'T OPEN ATTACHMENTS

You should know this by now. Most virus infections arrive via attachments in spam. If you don't open the attachment, you won't get infected.

4 DON'T CLICK LINKS IN EMAIL

As mentioned in our section on phishing, HTML links can be easily spoofed to look innocuous. If you must visit a link that was mailed to you and you're certain it's not malicious, cut and paste the link. Better yet, manually type the link into your browser.

5 TURN UP IE SECURITY SETTINGS

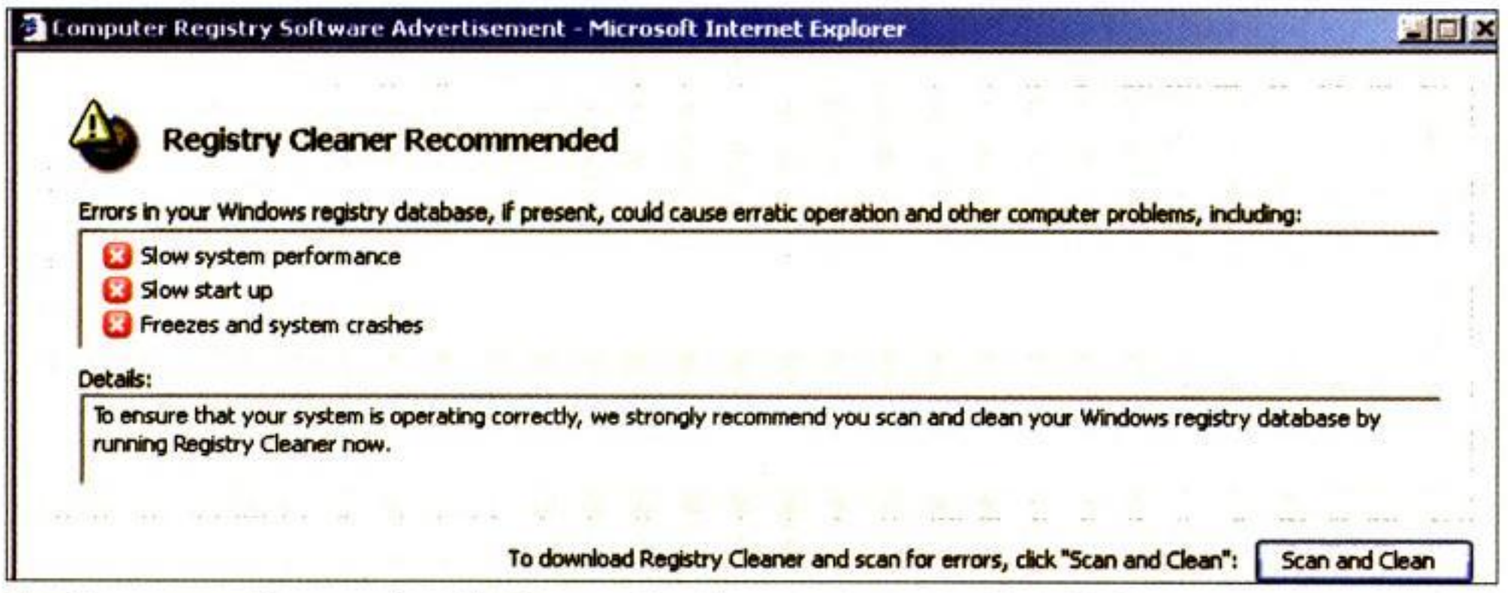
If you're still using *Internet Explorer*, it doesn't hurt to turn up the default security settings in the browser. Click Tools > Internet Options > Security > Custom Level. You can simply change the custom setting to High at the bottom of the window, or tweak individual settings like disabling .NET components and Javascript applets.

6 WAREZ = HAXX

Come now, you don't think those cracker applications are made out of the kindness of some hacker's heart, do you? Be wary of anything that promises free access to anything you're supposed to pay for: commercial software, movies and music, passwords, and of course, porn.

7 FIX THE MESSENGER SERVICE

Pop-ups used to be able to sneak onto PCs through the back door: the Messenger Service, which works on different TCP and UDP ports than the browser. The good news is that Microsoft finally disabled Messenger with XP Service Pack 2. Make sure it's off by visiting Control Panel > Administrative Tools > Services. Click Messenger in the list to check its status. MPC


Computer Registry Software Advertisement - Microsoft Internet Explorer
Registry Cleaner Recommended
Errors in your Windows registry database, if present, could cause erratic operation and other computer problems, including:
Slow system performance
Slow start up
Freezes and system crashes
Details:
To ensure that your system is operating correctly, we strongly recommend you scan and clean your Windows registry database by running Registry Cleaner now.
To download Registry Cleaner and scan for errors, click "Scan and Clean":
Scan and Clean

That's no security warning, that's an advertisement pop-up. Install the software as prompted and you're putting adware on your machine and exposing yourself to more pops.

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Stay ahead of the game!

Don't let a virus take you down in the middle of your game. Rated #1 by PC World magazine, BitDefender delivers superior threat management to over 41 million users.

Are you game? Try it for free at:
www.bitdefender.com

AV comparatives ADVANCED+

bitdefender®
secure your every bit

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Recover Your Deleted Files

Have you accidentally deleted pics off a media card or quick-formatted your drive, and you want to recover the contents? You may be able to recover your data with these handy tools

We have this "friend," whom we'll call "Steve," who did something really, well, stupid. He accidentally deleted his entire archive of digital photos—more than 9GB of shots, including 99.99 percent of all photos that existed of his twin 3-year-old daughters—by mistakenly quick-formatting the wrong drive in my, err, "his," PC. D'oh!

Steve naturally came to *Maximum PC* with his dilemma, and our data sleuths were on the case. A little tool called *Zero Assumption Recovery* solved the deleted-photo issue in short order. In just a few quick steps, and an hour's wait for the program to scan Steve's 300GB drive (which we installed as a secondary drive in another PC), we had his lost photos back! Not only did the scan find the pics, but it also managed to recover the original file names and folder structure—a feat several other similar programs couldn't match.

But what about all the other data on the drive? We wanted it *all* back. So we turned to the big gun: *GetDataBack for NTFS*, which worked exactly as advertised. Finally, we also investigated how to get deleted files off of removable media, such as CompactFlash and SD memory cards.

Thankfully, Steve only quick-formatted his drive, and he immediately stopped using it, so the data was still there to be discovered. Any of the following methods should help you, too, should you ever find yourself in poor Steve's shoes.

BY STEVE **KLETT**

TIME 1 to 5 HOURS

INGREDIENTS

- **ZERO ASSUMPTION RECOVERY**
  Free trial, www.z-a-recovery.com
- **GETDATABACK FOR NTFS**
  $100, www.runtime.org
- **MEDIARECOVER**
  $30, www.mediarecover.com
- **A SPARE HARD DRIVE OR PC**
- **LOTS OF TIME**

CAUTION!

If you accidentally delete data off of a drive, or need to recover data from a quick-formatted drive, immediately stop using the drive. Install it as a secondary drive in the original PC, or in a spare machine, and install and run all recovery software on an unaffected drive. Do not save or install anything to the drive you want to recover data from, or you could accidentally render your deleted files unrecoverable!

Recover Data from Your Hard Drive

GetDataBack for NTFS is the epitome of the adage "you get what you pay for." Several freeware programs, including even the free trial version of *GetDataBack for NTFS* itself, either didn't find a thing on our problem drive, or spit out just a laundry list of meaningless numbered files instead of our original file-structure.

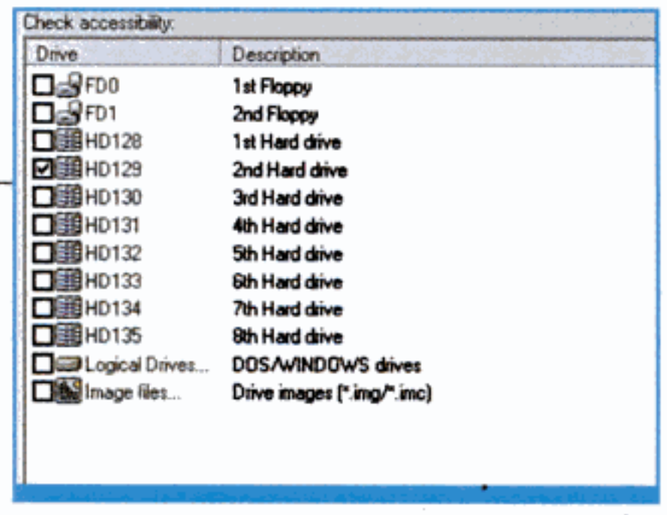
Enter the full registered version of *GDB for NTFS* ($100), and *presto*—not only did the application find *all* of our lost files, but it also completely recovered the drive's original file structure and allowed us to recover everything, not just the digital photos we were initially hoping for!

Sure, $100 is a pretty big hit on the wallet, but when you consider that it can cost hundreds, even thousands, to have your data professionally recovered, it's money well spent (particularly when you add in the ability to perform the recovery yourself: Do you really want some stranger to see all those lost pics and "home movies" you want back?).

Here's how to use *GDB* to recover deleted or lost files on a working drive formatted with the NTFS file system. If your hard drive isn't detected by Windows, or can't be read, you'll probably have to send the drive to an expensive data-recovery specialist to recover your bits.

1 Determine the Correct Hard Drive

Unfortunately, the program does not list your drives in the same manner as Windows does, but with a little trial-and-error you should be able to determine the drive you want to scan. For example, if you want to scan your D drive, which is your secondary hard drive, select "2nd hard drive" and click Next.



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2 Select the Proper Partition

Your next move is to select the partition you wish to scan, which in our case is the first partition (NTFS) listed in the Available Drives column. Click the partition name to highlight it, and then click Next.

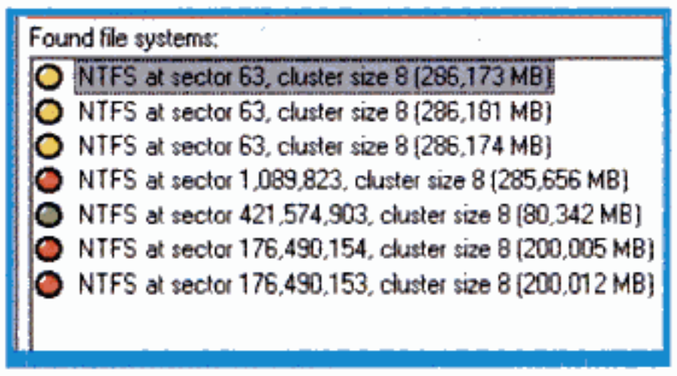
3 Select the Exhaustive Mode

While *GDB* gives you the option of selecting which specific sectors on your drive you'd like to scan, we doubt anyone is hardcore enough to record the specific drive sector on which their data is physically stored—we know we're not. So we'll have to scan the time-consuming way: Toggle the "Search entire drive" and "Excessive search" radio buttons and click Next. Excessive search means exactly what you'd think: It directs *GDB* to perform the most exhaustive search possible of every sector of your drive.

4 Now It's Time to Wait

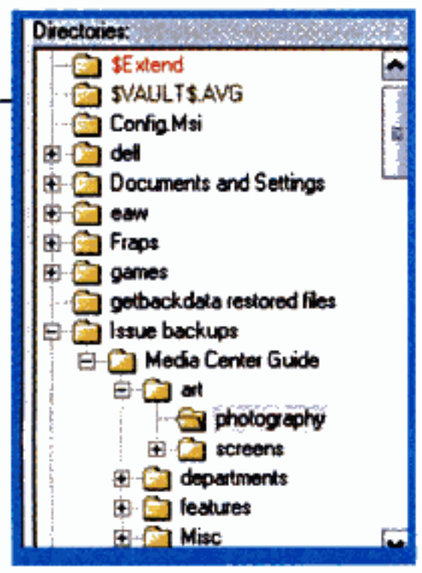
Sit back and read *War and Peace* or catch up on some sleep—this is gonna take a while. We jest, but only partly: scanning our 300GB drive took an hour and a half.

5 Choose the Files to Recover


Found file systems:
NTFS at sector 63, cluster size 8 (286,173 MB)
NTFS at sector 63, cluster size 8 (286,181 MB)
NTFS at sector 63, cluster size 8 (286,174 MB)
NTFS at sector 1,089,823, cluster size 8 (285,656 MB)
NTFS at sector 421,574,903, cluster size 8 (80,342 MB)
NTFS at sector 176,490,154, cluster size 8 (200,005 MB)
NTFS at sector 176,490,153, cluster size 8 (200,012 MB)

Once the scan is complete, you must select the file system you want displayed in a "recovery tree," which simply means you need to choose from the scan list what logical drive you want to see the contents of, and click Next. After a relatively brief 10- to 15-minute wait, *GDB* will build and display the file structure of the lost logical drive you selected.

6 Recover Your Files



Now, simply browse for the folder you want to recover just like you would in Windows Explorer. Right-click any folders or files you want to get back, and select Copy. *GDB* will save the folder (and all of its sub-folders) to a location of your choice. Rinse and repeat until you've recovered all of your files.

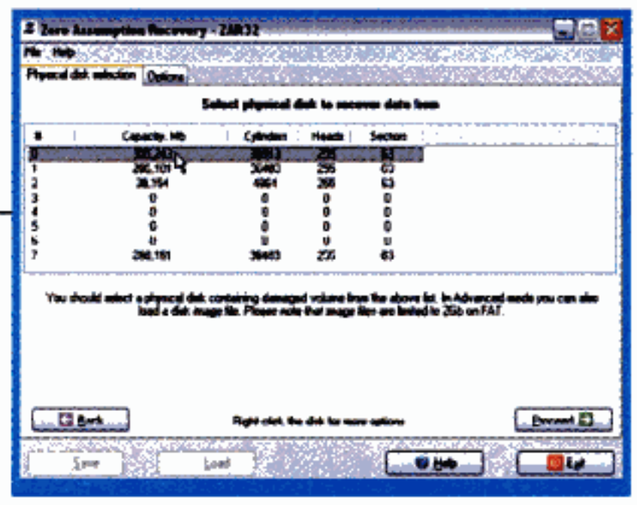
The Freeware Approach

You're in college and would rather spend your money on Milwaukee's Best and pizza than fancy-pants data-recovery software: We've been there. You're not out of luck, as some decent free options exist, such as the free trial version of *Zero Assumption Recovery*. This slick little program will not only recover deleted images, but many other file types as well. Here's how to use *ZAR* to get your data back.

1 Optimize Your System

Fire up the program—you can probably leave the default settings alone. If you have more than 1GB of system memory, however, select the Options tab and "Faster method" from the "Volume parameters analysis" pull-down menu. Go back to Preliminary Setup and click the Proceed button.

2 Select the Hard Drive to Scan

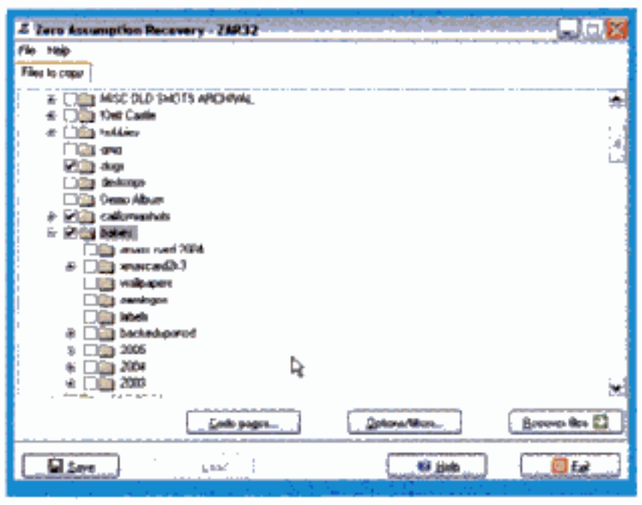


Now, select the drive you want to scan for lost files by clicking it; select Proceed. Next, select the partition on the drive you want to search and click Proceed again.

3 Wait for the Scan to Finish

Sit back and wait for the program to scan your drive, which might take a long time, depending on the size of the partition you selected. Our 300GB drive took an hour and 15 minutes.

4 Recover Your Files



Whoop! If the stars are aligned in your favor, you will be rewarded with your old folder structure, which you can navigate to locate and restore your files. Note: The trial version allows only four folders to be recovered per scan, so you might need to repeat this procedure multiple times—or pony up the $100 for the full version.

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9 Memory Card Reader / Writer
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Backlit LCD: 2 Fan RPM's / 2 Temperature Zones
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Recover Data from Portable Media

If you accidentally delete photos from one of the memory cards you use in your digital camera (such as a CompactFlash or SD), and you want them back, it's no problem. There are several utilities, including several freeware programs such as *ZAR*, that will do the trick.

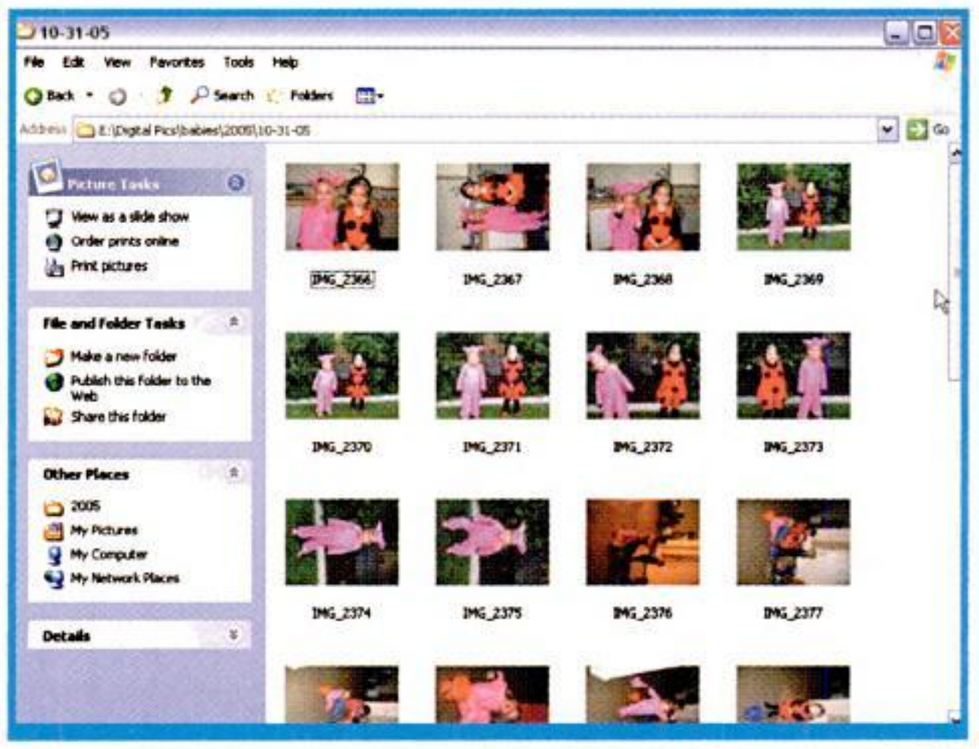
However, when it comes to preserving precious memories, we recommend you don't skimp: Slap down $30 on *MediaRecover*, which is designed from the ground up to rescue lost media files from hard drives and media cards of all types, including SmartMedia, CompactFlash, Memory Stick, Secure Digital, xD Picture Card, Microdrives, and MultiMedia Card. It does a good job, it's relatively fast, and it's a snap to use. We deleted a few dozen photos off a 1GB CF card and used *MR* to get 'em back—in less than 30 minutes, from start to finish.

1 Identify Your Drive

Insert the CF card into your PC's media reader and select the appropriate removable media drive letter to scan. Click Next, and then select a folder where you want recovered files to be saved. Click Next, then Start, and then select a Scan method (we choose Quick Scan because we're just after deleted photos)—leaving everything else at the default settings—and click Continue.

2 Select the Images to Recover

The scan commences and a window pops up that displays thumbnails of recovered images. When the scan is complete you just need to choose which images you want to save, and select Save Images. The preview window will close and bring you back to the root menu.



3 Save Your Files

The pay-off: Now, simply hit the "Open recovered files" folder and you're done. *MR* opens the folder in Explorer—in Thumbnails view, no less—and you can go to sleep knowing your pics are safe once again.

4 One Last Step

Before you go to sleep, make sure you backup your precious memories—put a copy of your digital photo folder on another drive, and burn it to CD or DVD. MPC

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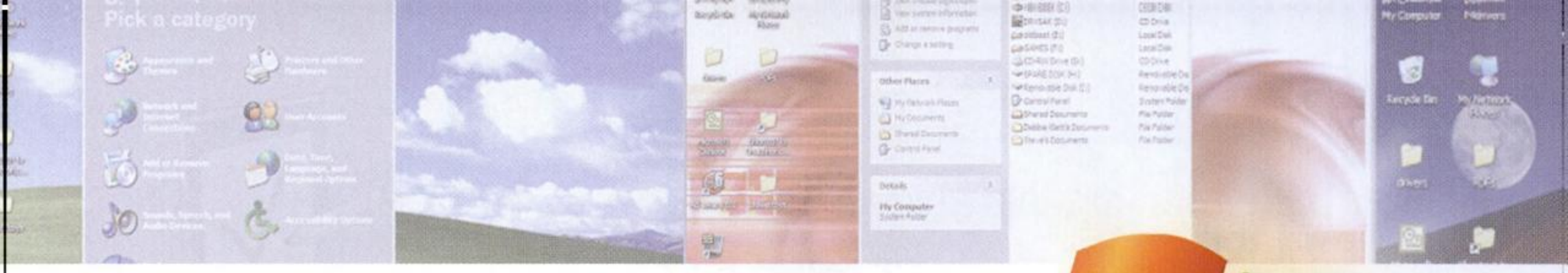


PowerToys for Power Users

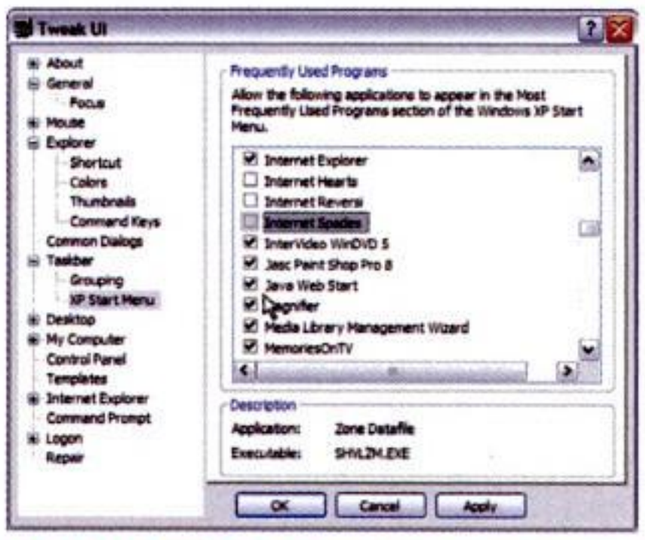
Don't have the time or desire to get your hands dirty messing with XP's innards? Microsoft's *PowerToys* will give you a high degree of customization options, without the mess.

No power user should go without Microsoft's own suite of nine software tools, known collectively as "PowerToys," which put a great deal of customization options in your hands. Released with each version of Windows, PowerToys for XP are available for download at http://www.microsoft.com/windowsxp/home/downloads/powertoys.asp. There's no charge for the download, just don't go asking MS for any PowerToys tech support—it doesn't provide it. Don't let that dissuade you from trying PowerToys out. XP's PowerToy lineup includes some of the handiest Windows utilities we've seen yet.

BY **MAXIMUM PC** STAFF

Give your desktop a 4X facelift with the Virtual Desktop Manager *PowerToy.*

Use TweakUI *to par down XP's default file templates to reduce desktop clutter.*



TweakUI *makes it easy to customize your Start Menu programs.*

TweakUI

First and foremost is an excellent new version of *TweakUI*, which we've mentioned a few times already in this magazine. *TweakUI* is a small-but-powerful program that lets you change many Registry settings without having to get down and dirty with *Regedit*, which can be scary. Essentially, it lets you unlock many of XP's hidden Registry features via a very simple point-and-click interface. And, you can use it to easily reconfigure many of XP's default UI and program settings. For example, you can use it to set which icons appear in the Start menu and on the desktop—it puts all the options in one place for you to pick and choose. You can use it to set how long the buttons in the Taskbar flash orange trying to catch your attention, or to tweak cursor shadows and menu fading. You can even use it to prevent programs from appearing on the Recently Used list in the Start menu. If you're only going to use one PowerToy, make it *TweakUI*.

Virtual Desktop Manager

Next up is the *Virtual Desktop Manager* Powertoy, which gives you the power to wield not two, not three, but four virtual desktops on a single monitor. So, if you don't have the desktop real estate for a true multimonitor display, which we outlined for you on page 20, give it a whirl. Each desktop features a copy of the Start menu, desktop, and taskbar—and each virtual desktop can be used to run different applications simultaneously. This is a great way for budding power users to strut their stuff and organize groups of open apps into their own desktops for fast switching amongst them all. For instance, you could have your *Office* apps open on one desktop, email apps on another, web pages on the third, and *Tetris* on the fourth.

Just right-click the Taskbar and select Toolbars>Desktop Manager to launch the Virtual Desktop Manager. A new toolbar, entitled MSVDM, will be added to the Taskbar, and you can use it to switch between the

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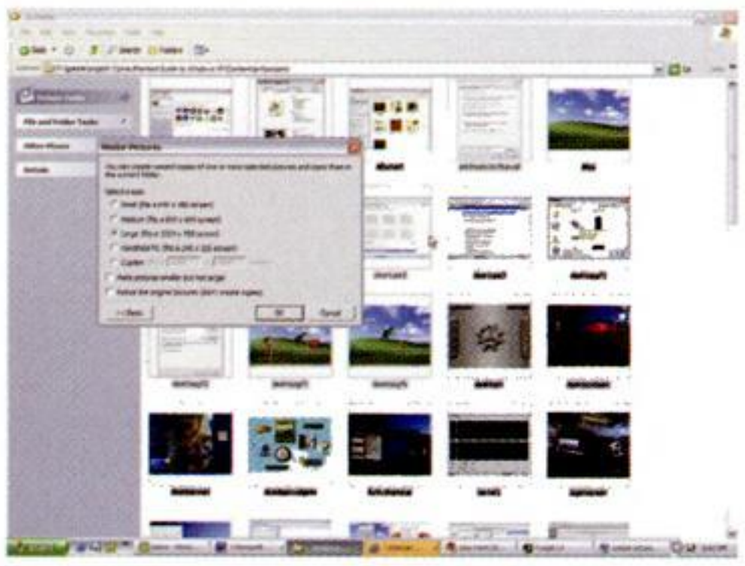
Like to have lots of open apps on your desktop at once? The Alt-Tab Replacement toy makes it easier to find the one you want.

virtual desktops, which are numbered 1 through 4. Pretty cool, huh?

Alt-Tab Replacement

We used to think the default ALT+TAB application switching device built into XP was fine, until we saw this toy. *Alt-Tab Replacement* does exactly what the name implies—it replaces XP's default method with a one that gives you a thumbnail preview of all open applications in the task list. Just hit ALT+TAB as before, and continue to hit TAB while holding down the ALT key to select the app you want, then release ALT. Simple. However, if you've got an older PC that has its hands full just running XP you might want to give this toy a pass—generating and displaying the thumbnail images can bog down your system. For owners of newer PCs though, it's a definite plus.



Finding it a pain to resize all those pics o' the kids for your web site? Image Resizer makes it painless.

Image Resizer

Digital cameras are great, but resizing your pics for use on the web, email attachments, or to display on your PDA can be an extremely tedious, time-consuming chore. It may not be the most sophisticated tool for the job, but the Image Resizer PowerToy is free and it's very adept at resizing groups of images efficiently. Resizer works similarly to the "Send Pictures via Email" options already built-in to XP, but it ads the ability to process batches of images at the same time. Resized images are generated with filenames that are similar to the original image's and include a designation that denotes the new size, such as "medium" or "WinCE," which makes it easier to organize them in your folders.

CD and HTML Slide Show Generators

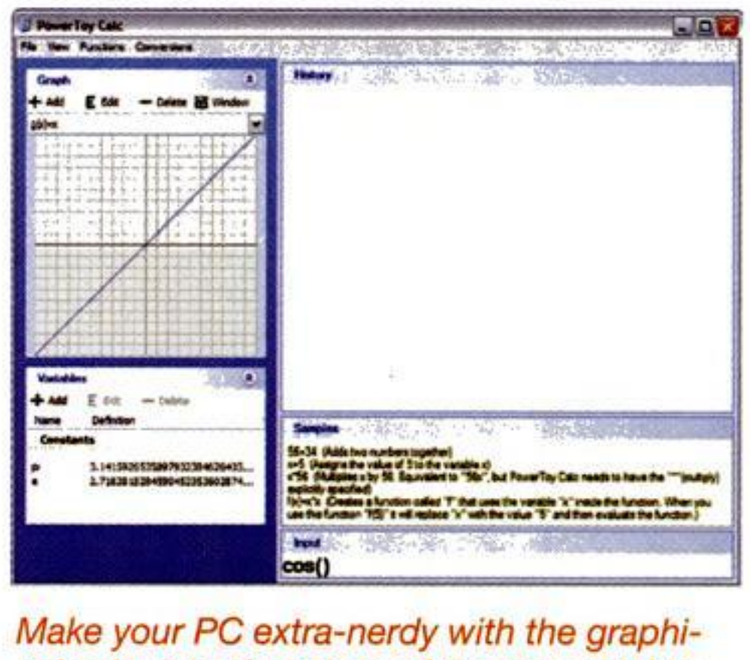
This is another tool that digital photo buffs are sure to find useful, particularly when it comes to sharing pics with Grandma and Grandpa out in Kansas who just got a new computer. Really two tools in one, the *CD Slide Show Generator* integrates into XP's CD recording wizard and adds the option to add a picture viewer to image-only CDs, which means Grandma and Grandpa can just pop the CD into their PC and view the slideshow, wheter it's running XP or not. Similarly, the *HTML Slide Show Generator* makes creating picture albums for display on the web a simple process.

Open Command Window Here

This toy is a shell enhancement, and an update to an old favorite. It adds an "Open Command Window Here" context menu item, which you access via right-clicking, to folders in My Computer or Explorer. If you never use the command line, you can ignore this toy. If you do, it's a must-have.

Power Calculator

While most of us might not care about it, the *Power Calculator* is a beefy alternative to XP's default tool that will please college students—particularly those equipped with laptops and take trigonometry. It lets you graph and evaluate functions, as well as perform many different types of conversions than the puny default XP calc can perform.



Make your PC extra-nerdy with the graphical calculator functions of the new, mighty Power Calculator.

Taskbar Magnifier

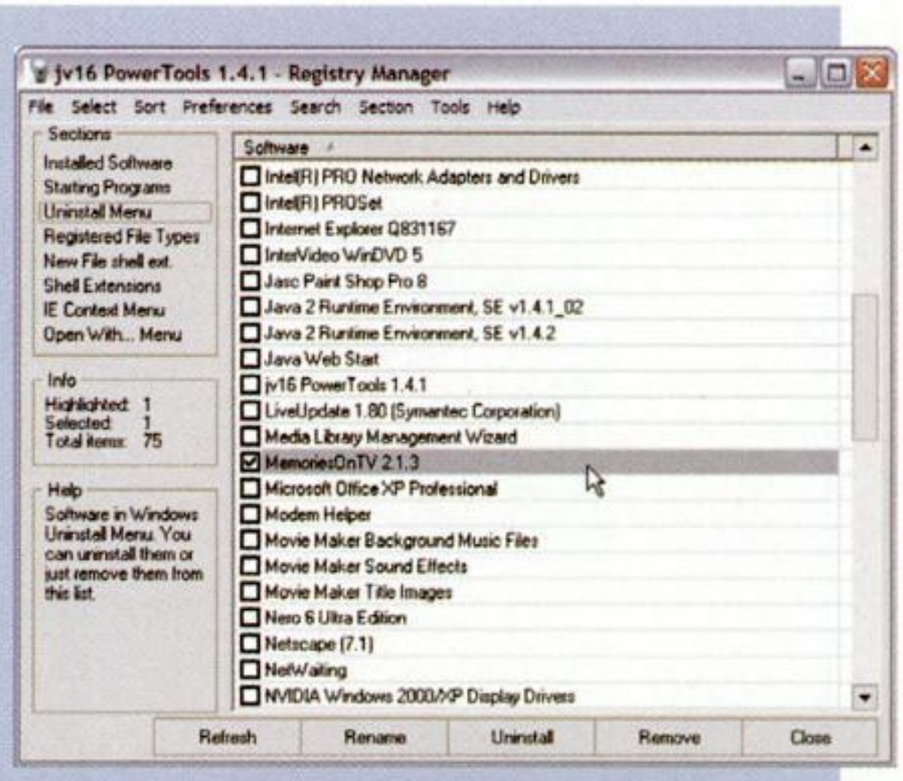
Similar to the Magnifier tool that ships with Windows XP (Start>All Programs> Accessories>Accessibility) Taskbar Magnifier provides screen-magnification capabilities, but is relegated to the Taskbar, which can often be difficult to read at higher desktop resolutions.

Webcam Timershot

This tool can capture pictures from a web camera at specific intervals and automatically save them to custom locations such as an FTP or web site. It also can perform other useful duties, such as resize the images. MPC

Not the Only Power Game in Town

Microsoft's not the only player when it comes to making handy XP-tweaking tools. One of our favorite third-party utilities for Windows, *RegCleaner*, has been updated for Windows XP in the form of *JV16 PowerTools*. This software suite cleans up duplicate files, invalid shortcuts, and general Registry clutter – and it can be used to remove stubborn software, which you might have deleted without "uninstalling," from the Add/Remove programs list. It's not freeware, but the trial version is on the disc. So give it a whirl and decide for yourself if it's worth the 30 clams. Find out more at **http://www.jv16.org/**.



If there are features you wished TweakUI *included, you'll likely find them in PowerTools.*

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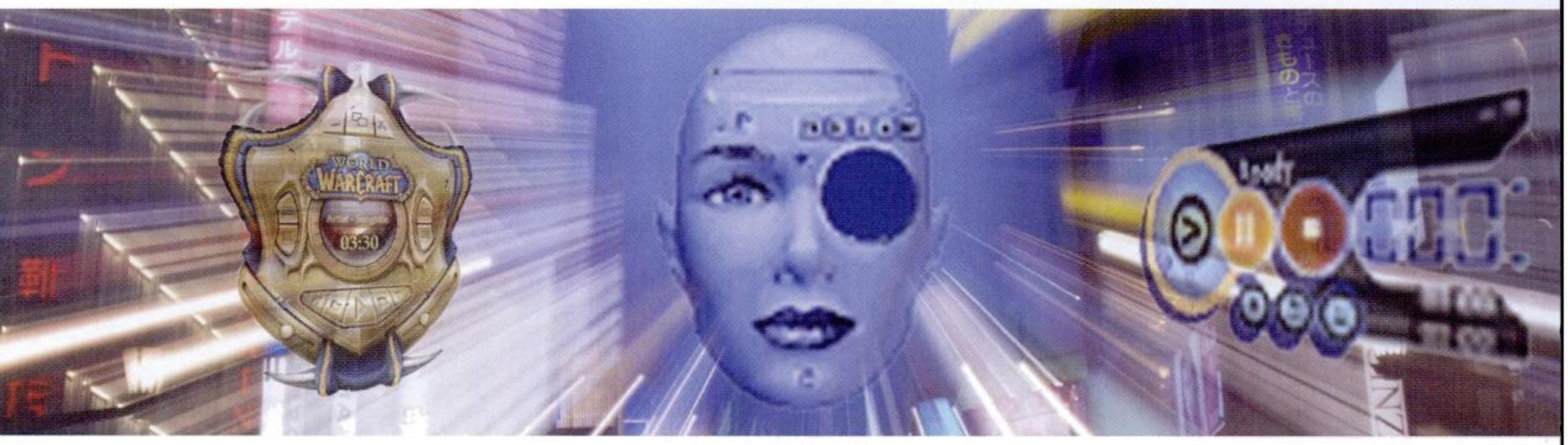


Pimp Out Win XP with TweakUI

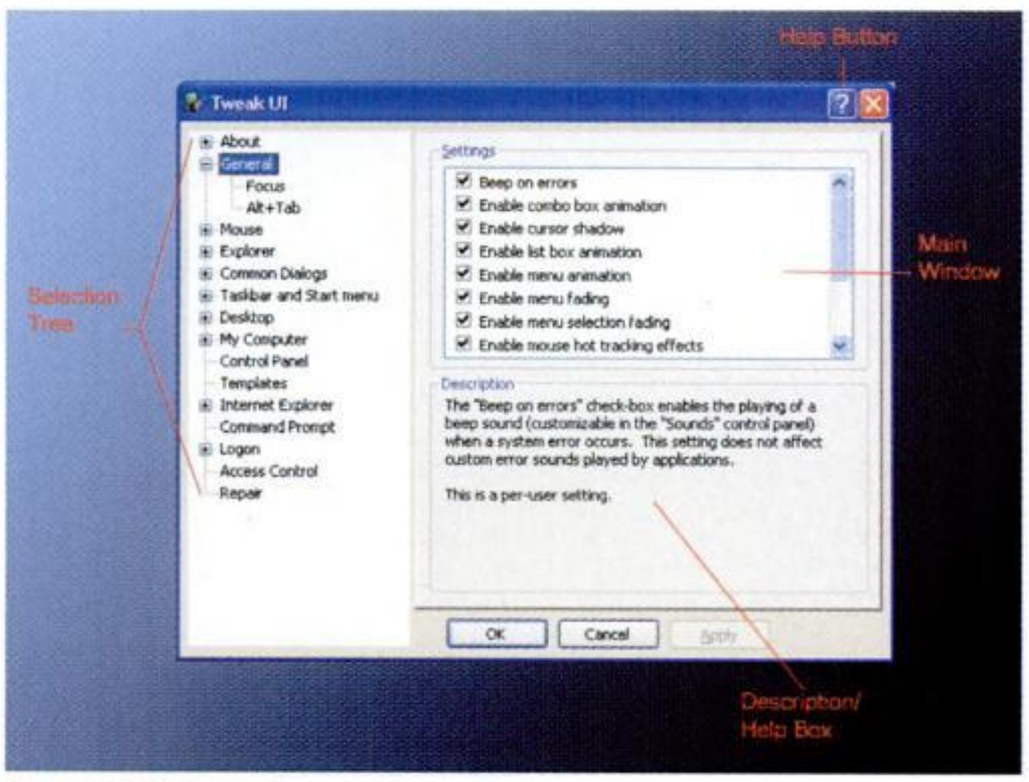
Tailor Windows to your own design with this under-used, under-appreciated PowerToy

BY JOEL **DURHAM JR.**

Whether you love it, abhor it, or just feel indifferent about it, Windows XP is a fixture on the overwhelming majority of computers worldwide. Microsoft gives users a handful of ways to customize it: you can tweak the wallpaper, the color scheme, a few aspects of the Start menu and the taskbar, and other bits here and there.

But have you ever wished that you could dig into its guts and reign supreme above other aspects, such as the behavior of taskbar grouping or the sensitivity of the mouse scroll wheel? How about getting rid of the little arrows on shortcut icons, or replacing them with an image of your own creation? You can do all that by deftly editing the registry, which we show you how to do on page 66. However, this is a somewhat arcane and risky process that some may be loath to touch. What if we told you that a handy little GUI-based app would let you hack into Win XP without manually mucking with the registry? Well, such an app exists—developed by Microsoft, no less—and it's called *TweakUI*.

A member of the Windows PowerToys suite, *TweakUI* has been around for generations of Windows operating systems. The PowerToys were created by Windows programmers who thought the OS could use a little more "tweakability," but who didn't want to place too much power into the hands of easily confused novice users. Microsoft expressly states that the PowerToys—including *TweakUI*—are *not* supported by the company, so if you choose to use them, you're on your own.



***TweakUI's* interface is bare-bones, but it's elegantly easy to use.**

Yet, considering that anything you can do with *TweakUI* you can also undo with a few mouse-clicks, it's unlikely that you'll cause any permanent damage to your OS. It's far more likely that you'll find the array of customizations offered by the little applet to be incredibly helpful, allowing you to adjust Windows to your own style. *TweakUI* offers a huge amount of freedom to alter the appearance and behavior of an array of Windows aspects, and it's an applet that no power-user should be without.

TweakUI's user interface consists of a small and simple window divided into a pair of boxes. On the left you'll find the selection tree, which lets you navigate to the particular area of the interface that you wish to tweak. On the right is the main window, where the actual

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tweaking options appear once you make a selection in the tree.

Changing a setting is as easy as navigating to it and, depending on the setting, checking or unchecking a box, editing a numeral, or wrangling a drop-down list. There aren't any tricky hexadecimal calculations to snare your brain, nor is there a need to worry about hosing the registry for all eternity. Anything you do in *TweakUI* is easily reversible. The program is so full of dynamic capability that you'll probably find yourself deep within its dialog box quite frequently for the first few days after you install it, chiseling Windows into the sculpture you always wished it could be.

Here's just a smattering of what you can do with *TweakUI*:

- Quickly and easily access the Windows Policy Editor
- Adjust all aspects of Windows' appearance
- Tweak the behavior of the mouse and its cursor
- Enable or disable Autocomplete
- Alter the programs available in the Start Menu
- Choose which icons appear on the desktop by default
- Decide which Control Panel applets are available
- Enable auto-logon with a couple of clicks
- Add, remove, or create items in the right-click "New..." menu
- Change the locations of special folders such as My Music or My Documents

You'll find *TweakUI* on the disc that came with this issue, or a simple Google search for "download TweakUI" will get you to the homepage for Microsoft's PowerToys. (Note: you need at least Service Pack 1 installed to run the latest version of the app.)

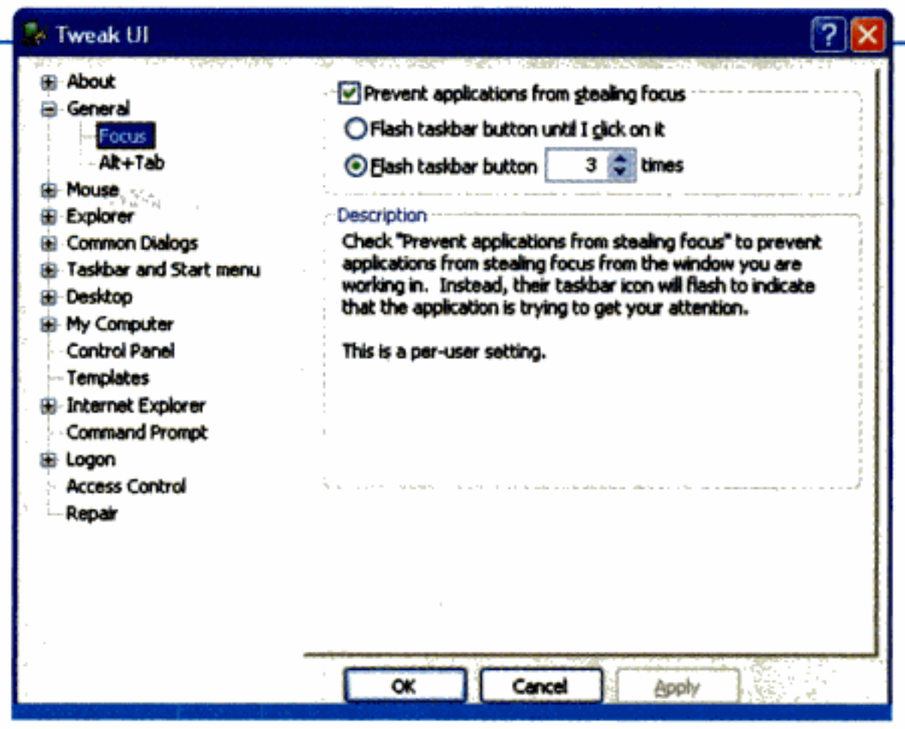
Run the executable and install it just like you'd install any other program. Because the applet is miniscule at 147K, it'll blast through the routine faster than you can read the dialog boxes. When it's finished, you can launch the program through the Start menu (it's in the PowerToys for Windows XP group) or click Start, Run, type **tweakui,** and press Enter.

Navigate the *TweakUI* window simply by clicking on the tree on the left. Some headings are self-contained, and others you can expand by clicking the + sign next to them.

Thwart Focus-Thieves

Sometimes, you'll launch an application that takes such a long time to load up that you'll jump to another task while Windows does its thing. Other times, you might relegate an app to the background as you wait for it to complete a time-intensive operation, such as downloading a large file. Suddenly, as you're typing away on your favorite web forum or in Word, these applications will become the active window in the foreground, jolting your attention from what you were trying to accomplish. This switch is known as *stealing focus*, and it can be extremely annoying.

You can use *TweakUI* to prevent applications from being nasty and stealing focus. Click the + sign next to General, and then click the Focus subheading. Fill in the checkbox next to "Prevent applications from stealing focus." You may still want to know when an application wants your attention, though, and you can let it communicate with you by flashing its taskbar button, either continuously until you click on it or for a set number of repetitions.



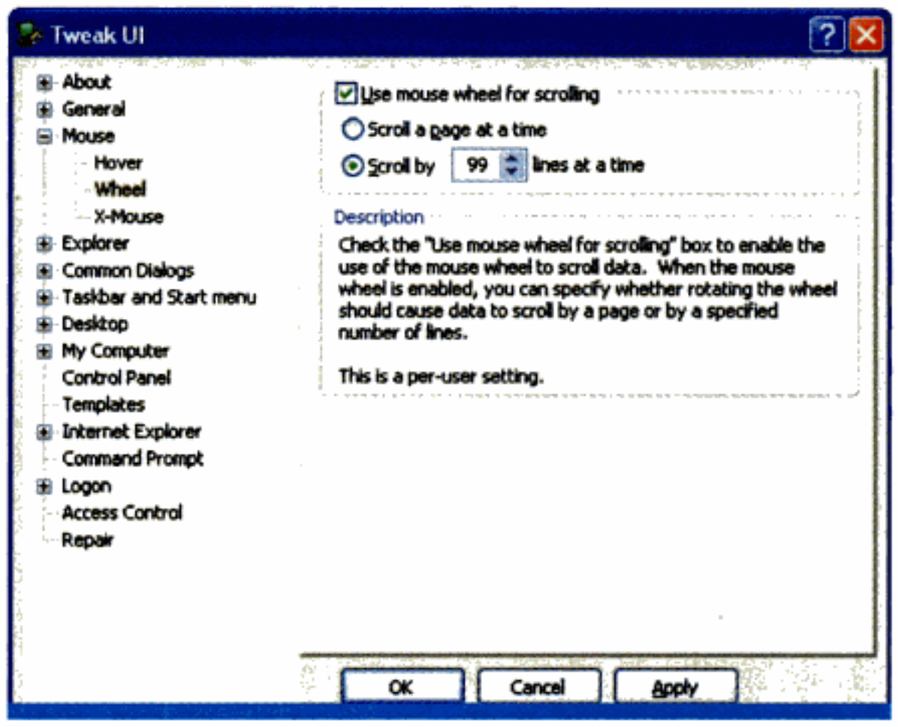
Prevent rogue applications from wrenching focus from your task.

Scroll However You Want to

The driver applets that come with certain mice give you varying control over how your mouse's scroll wheel operates. It may let you choose to scroll one line or three lines at a time, and that's about the extent of your options.

If you want to scroll faster, or infinitely adjust your mouse wheel's sensitivity, navigate to *TweakUI's* Mouse area. Expand the Mouse entry and click the Wheel subhead and you'll see a handy little interface with a checkbox ("Use mouse wheel for scrolling," which should be checked) and two radio-button options.

The radio buttons let you choose to either scroll a whole page at a time, which is handy for power-scrolling types who want to speed through documents and web pages, or to scroll a certain number of lines at a time. Use the arrow buttons, or type in a number, to tweak the scrolling. You can scroll from one to 99 lines—or any increment in between—at once.



Use *TweakUI* to set your mouse wheel to scroll with precise caution or wild abandon.

Change the Appearance of Shortcuts

By default, when you create a shortcut on the Windows desktop, or in an Explorer folder, it's displayed with a little arrow on the bottom left of its icon. If you want your shortcut icons to look "natural" (without arrows, please), or would like a different arrow or even a custom image applied to shortcut icons, *TweakUI* can help you.

Navigate to the Shortcut subheading beneath the Explorer heading. On the right side of the *TweakUI* dialog box, you'll see an

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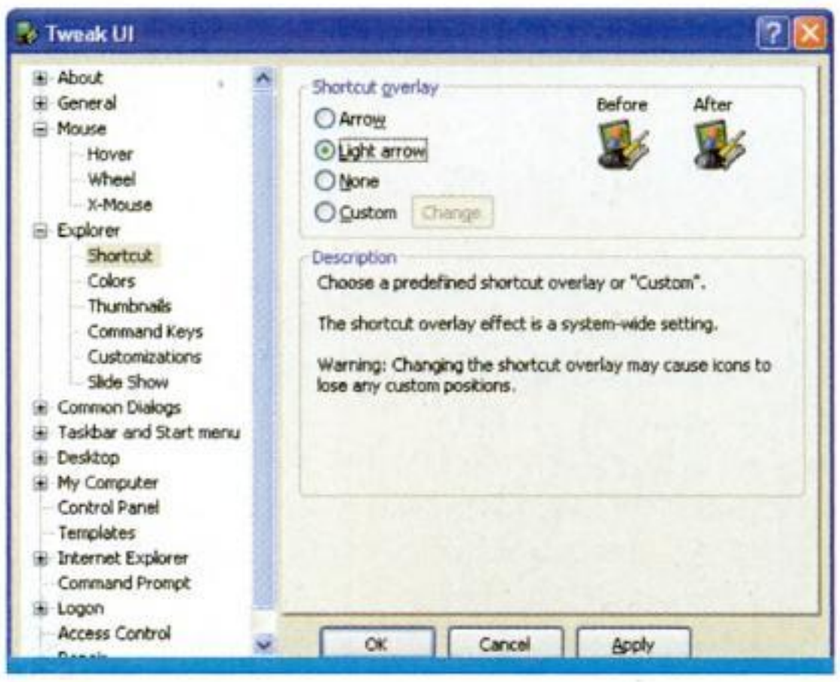
area labeled "Shortcut overlay" that contains four radio buttons. They define the appearance of shortcut icons in Explorer and on the desktop. Before-and-after pictures of a sample icon show you what your end result will look like.

The first option is the default: a little arrow in a white box on the bottom left of the shortcut icon. The second radio button is labeled "Light arrow" and changes the appearance to show a more subtle arrow on shortcut icons. You can turn off arrows altogether with the third option, and the fourth lets you choose a custom image. The custom image must be in icon format, or be contained in a library full of icons (like SHELL32.DLL). You can browse to wherever you've stored it on your hard drive.



Make the shortcuts on your desktop your shortcuts!

Clip (or Enlarge) Image Thumbnails

When you navigate to a folder full of images, such as the legendary My Pictures folder, Windows Explorer can (and does by default) show you a grid of thumbnails to preview each of the images in the folder. *TweakUI* gives you control over how the thumbnails look.

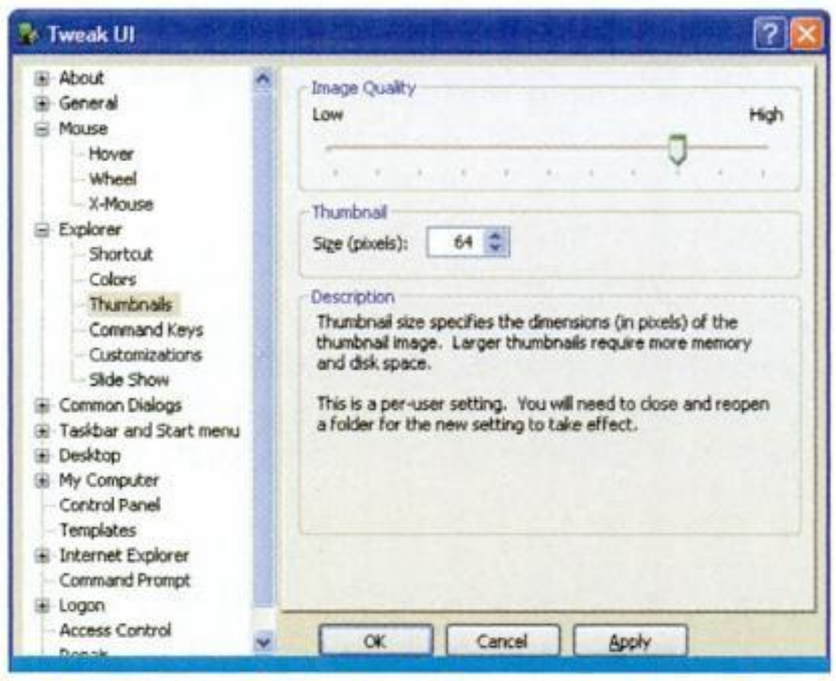
You can adjust both the size (in pixels) of thumbnails and their image fidelity. Not only does this tweak affect the appearance of the thumbnails themselves, but it can also have an impact on your computer's performance, especially on older machines with limited memory. Larger, more detailed thumbnails require more memory when a thumbnail-filled folder is displayed. Reduce the size or image quality of the thumbnails, and you can wring out a minor performance increase while navigating such folders. If you've got a slower PC, lowering these settings may be a good move; otherwise, we say crank 'em up!

Expand the Explorer heading in *TweakUI* and click the Thumbnails subheading. An image-quality adjustment is presented in the form of a slider, and below that is an adjustable pixel setting for thumbnail sizes. Note that while the size of the thumbnails will change according to your tweak, image-quality changes will affect only those thumbnails that you create *after* making these changes; those previously created will retain the default image quality.

Trick Out the Start Menu and Taskbar

Oh, that pesky Start Menu. A Windows fixture since Windows 95, it simply lacks the customizability that power-users desire. *TweakUI* fixes this issue with a couple of entries in its selection tree.

First, navigate to the main Taskbar and Start Menu heading. Click on it to unveil four checkboxes that control the appearance and behavior of the Start Menu. For instance, uncheck "Enable balloon tips" to prevent those little popup tips that appear if you

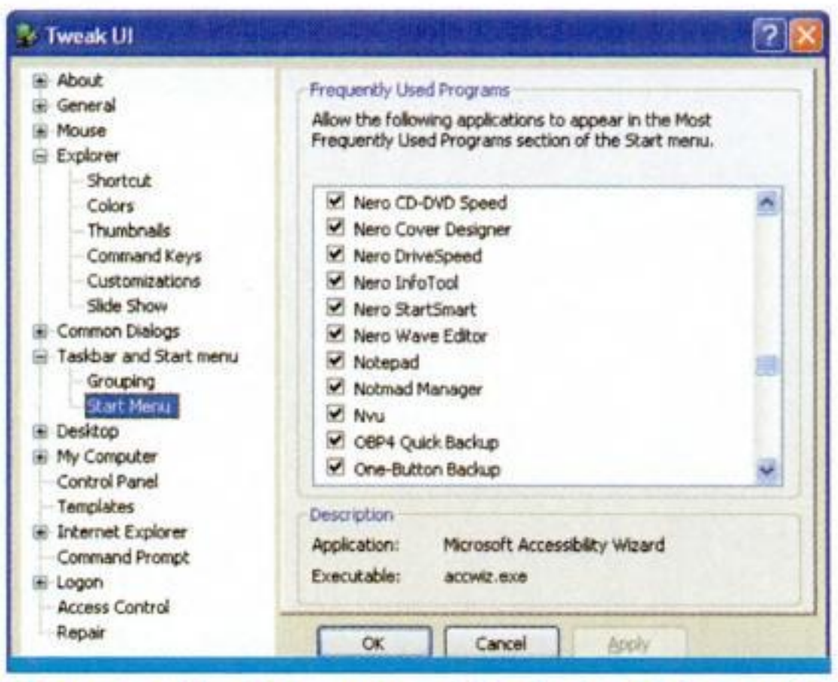


Finding it tough to identify your pics based on Windows' default tiny thumbnails? Crank 'em up!

hover the mouse over a Start Menu program. Uncheck "Show name on Start menu" to prevent the user name from being displayed when you click the Start button.

Next, click the Grouping subheading. This entry gives you control over how multiple instances of single programs are grouped in the taskbar. (For instance, if you have three *Internet Explorer* browsers open, Windows can group them into a single taskbar button.) You can let Windows group the least-used programs or the programs with the most windows, or group applications with a selectable number of open windows.

Finally, click the Start Menu subheading. You'll see a list of every program shortcut in your Start Menu, each with its own checkbox. Uncheck any programs that you would prefer not to be available in the Start Menu.



Group applications more effectively in the taskbar, and streamline the Start Menu.

Move Special Folders

Windows XP defines a number of special folders that many programs use as default locations for various file types. For instance, the My Music folder is often the dumping ground for digital song files that you either rip from CDs or download from online music shops.

The locations of these folders are often buried deep within the Windows Explorer directory tree—usually somewhere in the Documents and Settings folder. You may one day wish to change where Windows locates and looks for special folders: for example, we used *TweakUI* to move the My Music folder from its default location on our C: drive to a second hard drive we installed

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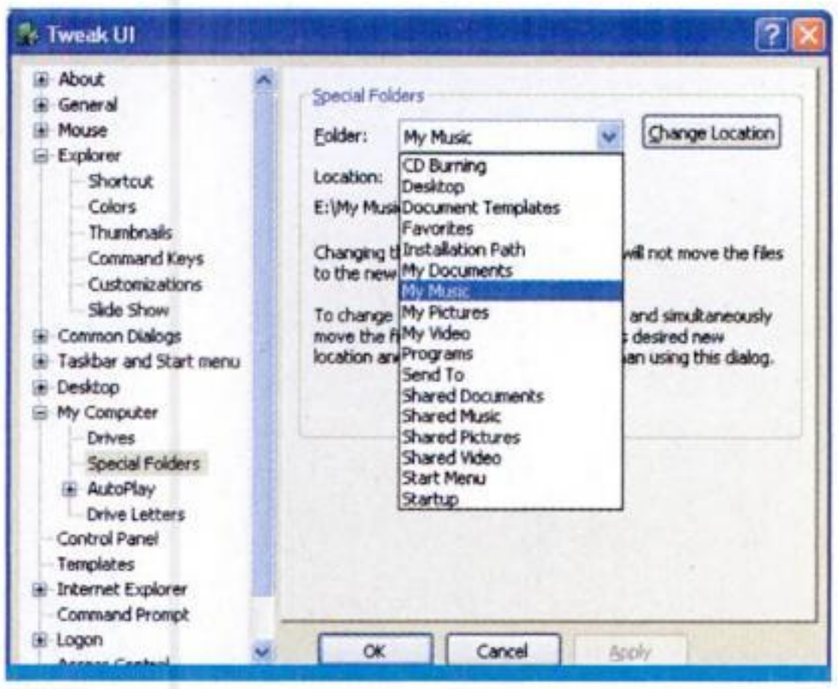
Pimp Out Win XP with TweakUI

specifically to house digital tunes.

To do this, or something similar, open *TweakUI*, expand the My Computer heading, and click on the Special Folders subhead. A drop-down menu lets you select from a host of special folders. Choose one, click the Location button, and navigate to a new location. From that point on, Windows will know where to look for the folder whose location you changed.



Pick from a vast list of special folders and plop them wherever you want them.

Take Control of Internet Explorer

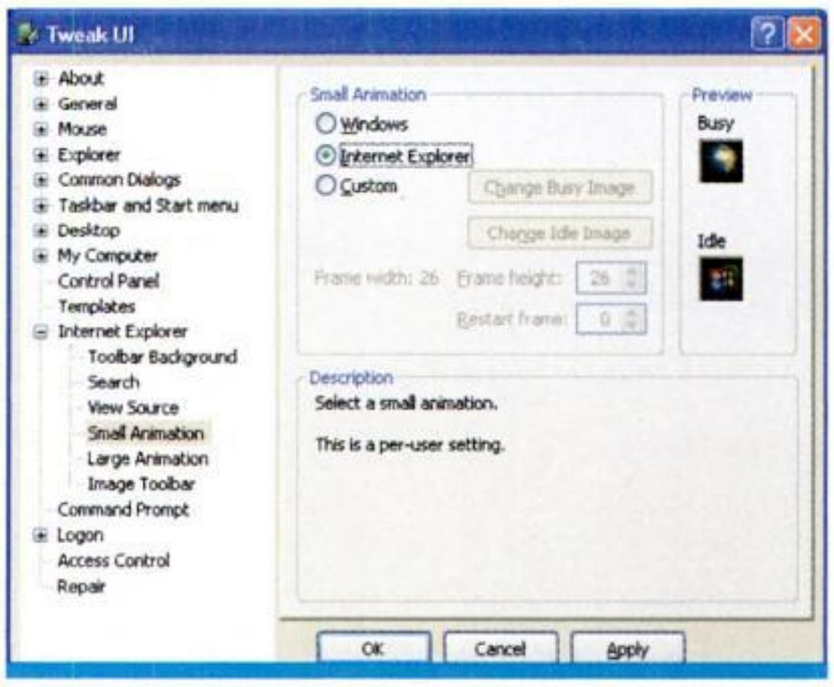
TweakUI contains a mother lode of ways to customize good old *Internet Explorer*, in case you haven't decided to go for it and switch to *Firefox*. You can expand the *Internet Explorer* heading: For example, in the main *IE* heading, you can toggle whether Windows will dynamically correct backslashes with regular slashes as you type in the address bar. In the same area, you can choose to include the Windows *path* environment variable in address-bar searches so that when you launch a search, *IE* will look in your hard drive's system path. This makes it possible to launch programs and utilities, such as the Calculator, by simply typing their executable (such as "calc") in the address bar.

Other *IE* tweaks abound. Under the Toolbar background subheading, you can change the toolbar backgrounds in *IE* and *Explorer* to a bitmap of your choice, located anywhere on your hard drive. Under the Search subheading, you can define search prefixes to point to specific search engines when you perform an address-bar search. Under the View\Source subheading, you can select a program of your choice to edit a web page's source code when you select the View\Source menu option in *IE*. (The default is *Notepad*, but you can change it to *Wordpad*, *Word*, or whatever text editor you like.) Finally, you can change the large and small icons that appear in the upper-right corner of an *IE* browser window, and tweak the size of the image toolbar, should you have it enabled.

Make a New "New"

When you right-click on the desktop or in a blank area of an Explorer window, one of the options in the Context menu reads "New." Hover over that, and you'll see a bunch of programs that you can invoke to create a new file within that program. Many applications that you install drop entries into the New dialog box automatically, but you can also add to it manually with *TweakUI*.

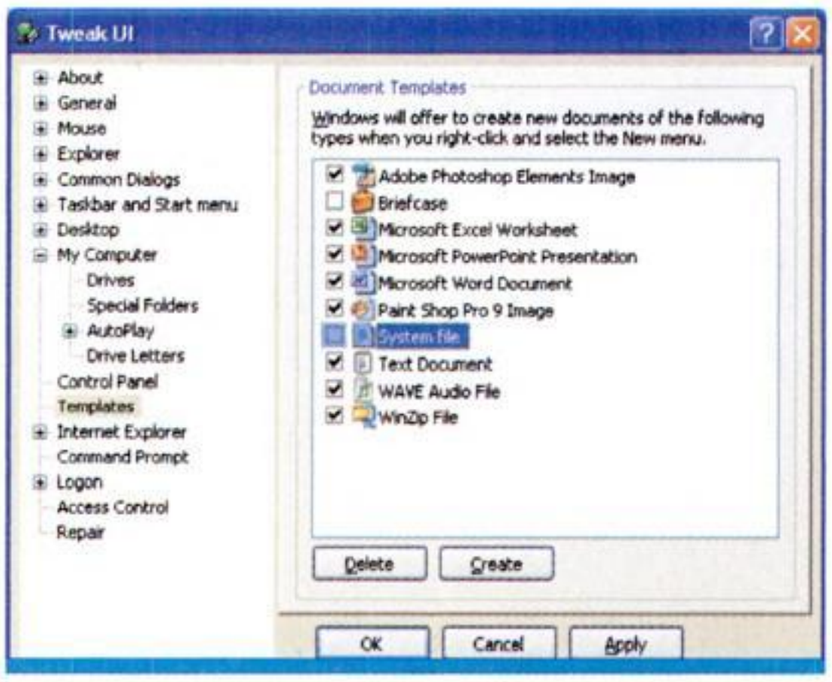
Click the Templates heading, and you'll see a list of "new document" templates, each with a checkbox next to it. You can



Make *Internet Explorer* yours by using *TweakUI* to change a cornucopia of settings, such as changing the icon in the upper-right corner.

uncheck entries to prevent them from appearing in the New context menu. (Seriously, who uses the Briefcase?)

Click the Create button to choose a file whose extension you want added to the New menu. *TweakUI* will create a template out of the file you choose. For example, choose a Word-document template with a .DOT extension to add the ability to instantly create a new Word template in any folder.



Display, hide, or create "New" templates here.

That's Not All...

When you open My Computer, either through the icon on the desktop or via the Start Menu, a window appears that generally contains shortcuts to special folders; hard drives and removable storage devices; scanners and faxes; and various other items that you can navigate with *Explorer*. You can control some of the icons that appear in the My Computer window with *TweakUI*.

Click the My Computer main heading in the *TweakUI* selection window, and check or uncheck various options, such as Control Panel, to determine whether a corresponding icon appears in My Computer.

Note that by clicking the Drives subheading you can also tweak which hard drives and removable drives appear in the My Computer window, from A to Z. However, only those letters with actual drives assigned to them will appear. For example, you can't get drive M: to appear in My Computer if it doesn't have a physical or network drive assigned to its letter. MPC

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Hack Win XP the **Right Way**

Pillage the Win XP's registry for bountiful gains in convenience and performance using these handy hacks

Hacking the Windows Registry to further customize XP to meet your needs: This is where the true power users are separated from the wannabes.

If the mere thought of exposing XP's guts and editing its code makes you cringe—maybe you've heard horror stories of people who've tried and have hosed their OS's in the process—there's no need to worry. Really. You've got Maximum PC here to guide you through this last, vital step in earning your XP power-user stripes.

BY JOEL **DURHAM JR** AND STEVE **KLETT**

We've been dabbling in the "Dark Arts" for years, and have made all the mistakes already so that you won't have to. Though operating on Windows' Registry admittedly has always been a risky and extremely complex procedure, it has never been as safe and straightforward as it is now with XP—provided you follow some basic guidelines, which we'll outline for you.

Essentially, you can think of the Registry as the Wizard of Oz that's behind the Windows graphical user interface you see every day. Others might tell you that you really don't want to see the wizard unless it's absolutely necessary. We're here to tell you different: Rolling up your sleeves and editing the Registry can be a very rewarding experience, particularly when a successful "hack" results in a more efficient way for you to interact with your PC. And it will definitely make you feel like you're in control of your OS, rather than the reverse.

The Registry: An Introduction

It's possible you've been operating your PC for years without ever taking note of the Registry—oblivious to the OS potential you could unleash with some strategic modifications here and there. If so, a primer is in order.

The Registry is a Windows database that operates behind the scenes, storing information about everything happening within your computer. Whenever you make a change to your computer—be it installing new hardware or software, or changing your desktop background—this change is flagged in the Registry.

The Registry is hierarchical in structure, similar to the branch/tree structure used in hard drives. The main branches are called "hives," and the hives contain "keys." Within the keys are "subkeys" and values that reflect the actual data stored in the Registry. By tweaking these values, you can alter the way XP looks, increase the speed at which it operates, and change many of its default settings to match your preferences.

For example, each time a new user logs on, a new hive is created for that user with a separate file for their user profile. Naturally, this hive is called the "User Profile Hive," and it contains specific Registry information about the user's application settings, desktop, network connections, and so on. User Profile hives are located under the HKEY_USERS key.

The supporting file for the User Profile hive for a given user is located in HKEY_LOCAL_MACHINE\Software\Microsoft\WindowsNT\CurrentVersion\ProfileList\SID\ProfileImagePath, and is named Ntuser.dat. The value of ProfileImagePath is a binary representation of the directory name of the user's profile, which includes the user's name. The Registry Editor displays this binary value as a string. By altering the values in this string, as well as any

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other values contained in the rest of the Registry's keys and subkeys, we can change the way XP works or looks.

You can use a variety of third-party, GUI-based programs to do this, such as Macecraft Software's *jv16PowerTools*. However, for most of us, the Registry Editor that comes with XP works just fine—though it's very low on bells and whistles. To access the editor, you simply click on Start Menu, Run, and type **Regedit**.

Cover Your Back With System Restore

Don't just go randomly pointing and clicking about: Changing some Registry settings could damage or disable critical XP components, and even prevent Windows from running at all. It's important that you proceed slowly and with caution, and that you don't make any changes unless you're absolutely sure of what you're doing. In fact, it's wise to perform a full system backup before diving into the Registry, particularly if you have no previous hacking experience.

At the very least, you should make prudent use of WinXP's System Restore procedure, which lets you set a "restore point" that you can use as a safety net. If your hacking efforts result in XP instability, or just in certain programs or functions not working as you'd like, you can just roll back XP to the last restore point and start over with a healthy OS—just like you stepped back in time.

Setting a restore point couldn't be easier, so there's no excuse not to take advantage of it. (You really should set a restore point before you make any type of significant change to your system, whether it's installing a new video card or even just installing a new game or version of *DirectX*.) And the best thing about the process is that rolling back to a particular restore point will not result in the loss of data you've created recently, such as email or *Word* documents, and the entire process is reversible. So if you select the wrong restore point and actually perform the roll-back, you can easily fix your mistake. For a walkthrough of the process, see our sidebar on this page.

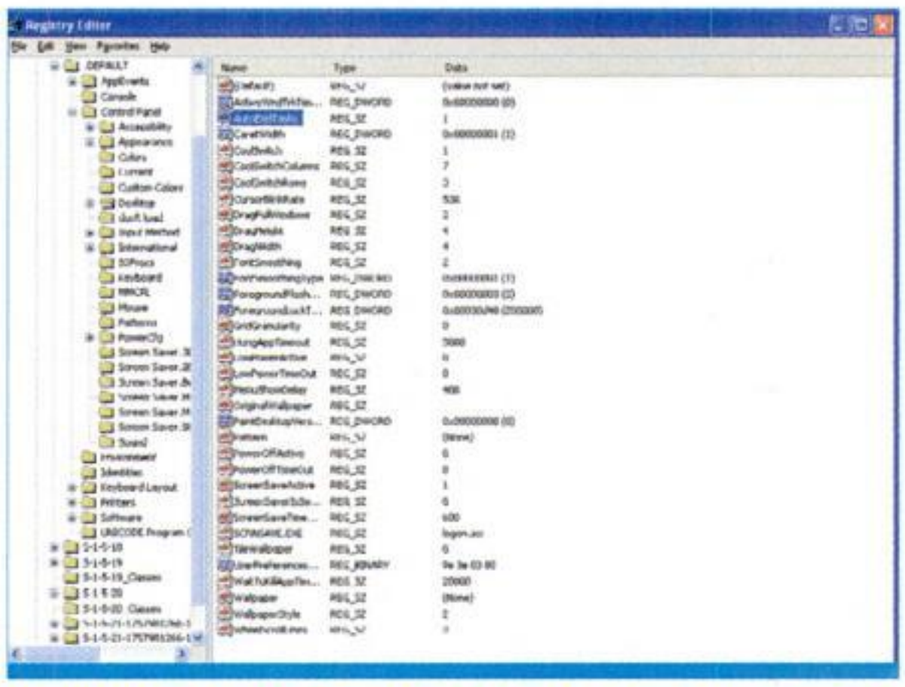
Start Slowly, with Basic Hacks

Okay, now that we've covered the Registry basics and set a restore point, it's time to take a deep breath and wade into the hacking pool. We'll start off nice and slow—covering some simple Registry edits that alter XP's default organizational structure—and build up to more complicated hacks. By the time you finish plowing through our top-secret hacks, you'll feel like a pro, and should be confident enough with the process to seek out your own tweaks to try out.

1 FORCE UNRESPONSIVE APPS TO CLOSE AT SHUTDOWN

Sometimes, you shut down your computer and it doesn't shut down. Instead, it sits there like an idiot and waits for you, all the while displaying a dialog nag that says something like "StupidApp.exe is not responding" and offers a button that says, "End now." You wonder to yourself, *Didn't I just tell Window to shut down? Doesn't that* imply *that I want this program to shut down, too?*

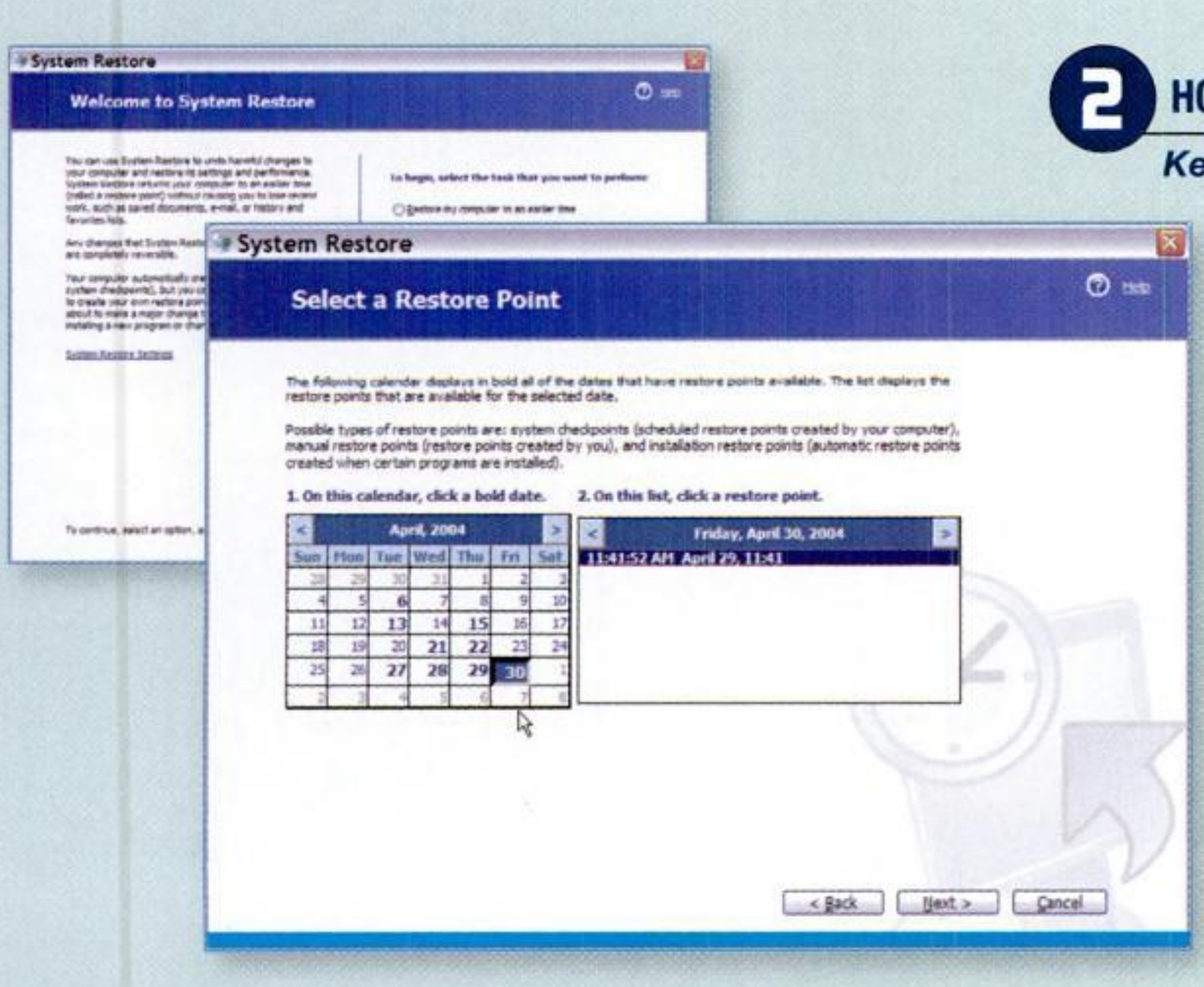
Wonder no more. You can make Windows shut down stubborn applications all by itself with this tweak. Launch RegEdit and navigate to HKEY_USERS\.DEFAULT\Control Panel\Desktop and look for a string called AutoEndTasks. If it's not there, create it, and set or modify its value data to 1. Close the Registry Editor and reboot, and you'll never have to worry about your computer staying on all night because one silly program forgot how to close itself.



Enable the AutoEndTasks string to force Windows to close stubborn applications at shutdown

2 HOW TO SET A RESTORE POINT

Keep yourself covered with XP's built-in safety net.


System Restore
Welcome to System Restore
System Restore
Select a Restore Point
The following calendar displays in bold all of the dates that have restore points available. The list displays the restore points that are available for the selected date.
Possible types of restore points are: system checkpoints (scheduled restore points created by your computer), manual restore points (restore points created by you), and installation restore points (automatic restore points created when certain programs are installed).
1. On this calendar, click a bold date.
2. On this list, click a restore point.
April, 2004
Sun Mon Tue Wed Thu Fri Sat
Friday, April 30, 2004
11:41:52 AM April 29, 11:41
< Back
Next >
Cancel

Roll your PC back in time, and even take it "back to the future" with XP's built-in System Restore utility. To access it, click Start, Help and Support, System Restore (listed under Additional Resources). Check the "Create a restore point" button, click Next, and then enter a name for your restore point. (Typically, it's a good idea to use the current date and time, or a description that reflects why you're setting the restore point, such as "Before My First Hack.") Now, click Create and you're done. If you get into trouble, just return to the System Restore home menu to select a restore point to activate, or to cancel a previous restoration.

Setting a restore point takes just a few seconds and a few clicks of your mouse. Restore points are tracked on a calendar, which makes it simple to take your PC "back in time.

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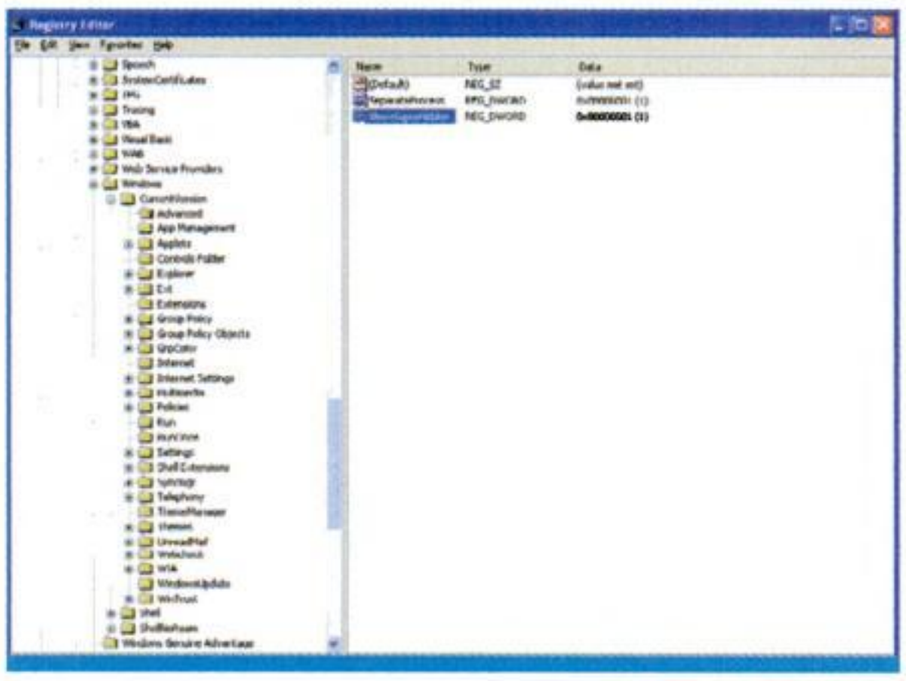
3 SHOW *ALL* OF THE HIDDEN OPERATING-SYSTEM FILES

When you use that "show hidden files and folders" setting in Windows Explorer's pull-down menu, you *should* be able to see *everything* on *your* hard drive, right? *Right?* Not according to Windows. Lurking deep within the directory tree, even more hidden trinkets laugh at you from behind their cloaking devices. Flush them out with this registry hack. Note, however, that Microsoft probably has a very good reason for hiding these system files (such as $MFT files) so deeply, so you shouldn't mess around with them unless you really, really know what you're doing. It can, however, be useful to see them when you're tracking down some of the nastier viruses and Trojans.

Navigate in the Registry Editor to HKEY_CURRENT_USER \Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced. Create a DWORD value called ShowSuperHidden. Change its value to 1. (Its decimal and hexidecimal value will both become 1, so you can modify either.) Exit the Registry Editor, reboot the system, and then explore Windows to see what interesting things you can find. To turn off this option, modify its value to 0.



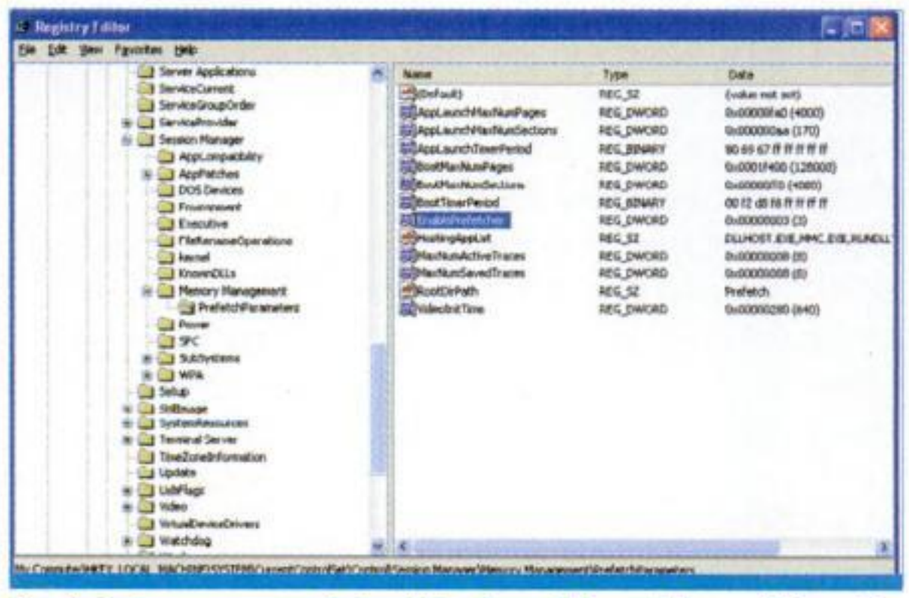
By creating and enabling the ShowSuperHidden Dword string, you can find files Microsoft (and some virus writers) didn't want you to see.

5 TWEAK PREFETCH TO BOOST BOOT TIMES

Prefetching is a trick that Windows uses to try to read your mind, and when it works it greatly enhances performance. Basically, the prefetcher gathers parts of commonly used programs to a special area of the hard drive. It stores the data in the C:\Windows\Prefetch folder. When Windows loads, and during its operation, it will prefetch commonly used components of boot and runtime applications. If you use any of those particular programs, they'll load more quickly.

XP can prefetch on boot and on application launch, or on either, or on neither. The prefetching behavior is entirely in your power. Disabling prefetching can slightly speed boot time, but most of the time you should leave it on for speedier application launches. Should you wish to change it, head to the Registry Editor and navigate to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management\PrefetchParameters**. There's a Dword called EnablePrefetcher; you can tweak it by setting it to:

0 — No prefetching
1 — Prefetch on boot
2 — Prefetch application launches
3 — Prefetch both

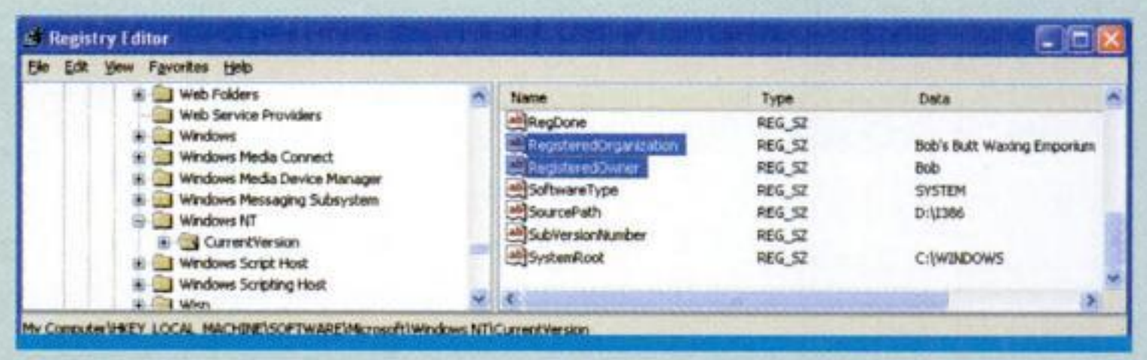


Prefetch your way into Windows' heart by editing the EnablePrefetcher DWORD value.

4 ALTER THE REGISTERED OWNER INFORMATION

When you install Windows, it asks for lots of information, up to and including your name and the name of your organization. Now, if you're like us, you install Windows so often that you may entertain yourself on occasion by filling in these fields with goofy stuff, like "Name: Bob, Organization: Bob's Butt Waxing Emporium". However, some people take life a little more seriously than we do, and they tend to want their personal Windows information to be accurate.

This tweak is especially handy when you sell your computer or give it away. You might not want your own identity associated with whatever the new owner plans to do. Open up the Registry Editor and go to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ Windows NT\CurrentVersion. Modify the string values called RegisteredOrganization and RegisteredOwner to whatever you want them to become. Note that this tweak won't change any account names, including the name that appears above the Start Menu. You will notice the difference, however, if you open the System Properties sheet.



Change these values to whatever and whomever you like.

The Registered to... field of the System Properties sheet will reflect the changes.

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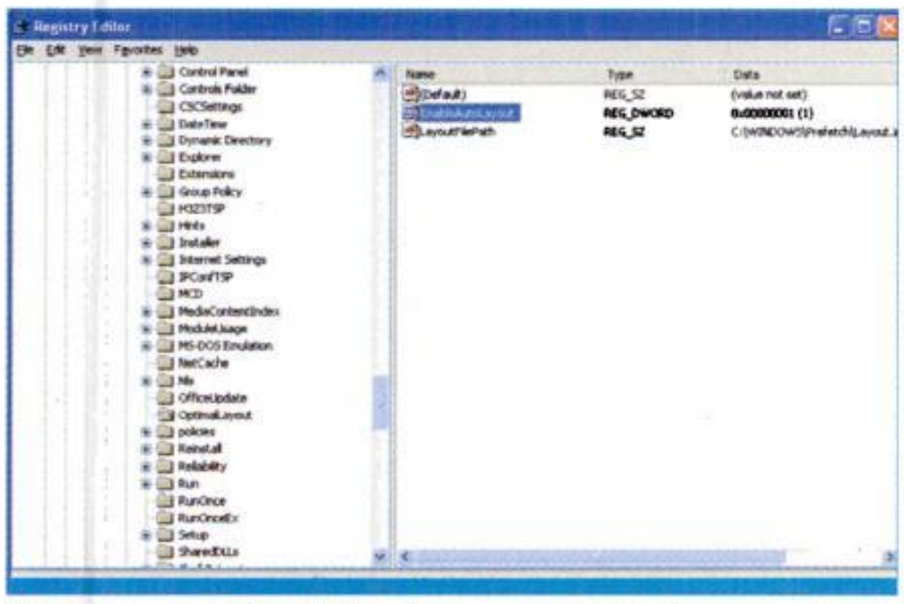
Hack Win XP the Right Way

When you're done, exit the Registry Editor and reboot the system.

6 ELIMINATE WINDOWS' COFFEE BREAKS

When you're at work, you get in trouble for sitting around doing nothing. Why should you let Windows get away with it? While you're busy doing non–computer-related things, Windows can busy itself by rearranging the files on its hard drive to place the more commonly accessed programs toward the first-accessed areas of the platters. That can improve performance. Windows does this when you defrag the drive, but you can tell the OS to do it whenever it gets a chance just by editing the registry. Windows will pause its efforts to rearrange the drive when you start to use the computer again.

Open RegEdit and navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\OptimalLayout. Modify the DWORD value called EnableAutoLayout, or create one if none exists, and set its value to 1. When you're done, exit the Registry Editor and reboot the system. Don't be alarmed when the hard drive chatters when you've left the system alone for a few minutes: It's taking care of business. To turn off this option, set DWORD value to 0.



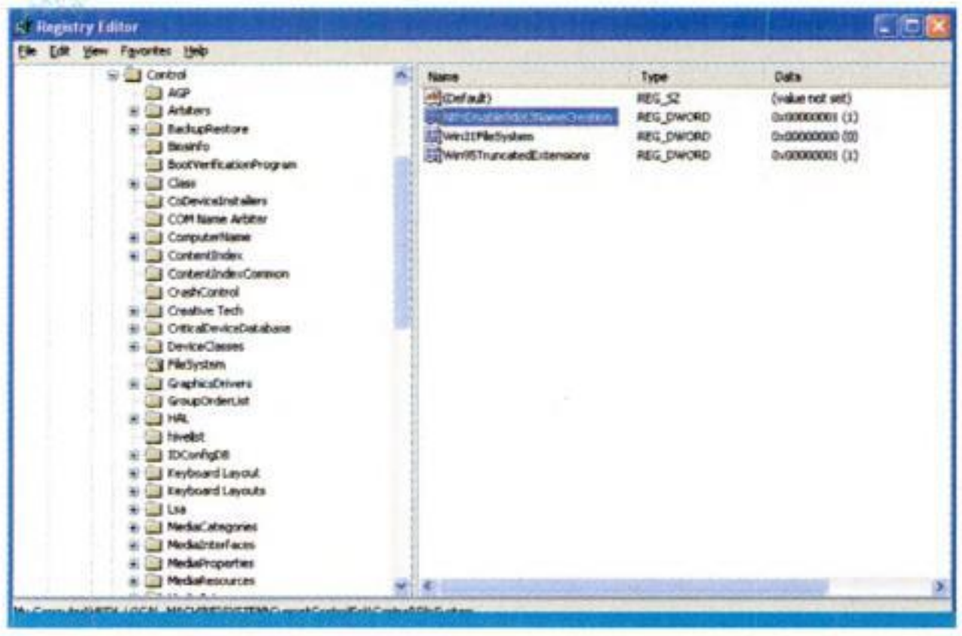
While you goof off, Windows can optimize your hard drive; just make this change in the registry.

7 TOSS OUT ANTIQUATED 8.3 NAMING CONVENTIONS

The curse of DOS-compatibility may follow us to our graves. With each generation of Windows since Windows 95, Microsoft has moved farther and farther away from good old MS-DOS, but the company has always trumpeted backward-compatibility. Even XP hasn't given DOS the finger yet, as it keeps two sets of filenames for every file in its directories: the standard file name, and the truncated 8-character.3-character filename. Thus, a document file called Hack the Hell Out of the Windows XP Registry would have an a.k.a. deep within Windows called hackth~1.doc.

Who needs it? Maybe you do. If you run DOS applications or really old Windows programs, don't mess with this hack. If you don't, eradicate the clutter by doing away with 8.3 filenames. Open the Registry Editor and navigate to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\FileSystem and modify or create the DWORD value NtfsDisable8dot3NameCreation and set the value to 1. Exit RegEdit and reboot.

Note that a few "modern" programs use the old format (for some bizarre reason we can't possibly guess), so if you run into trouble you can always disable this hack by setting the value to 0.

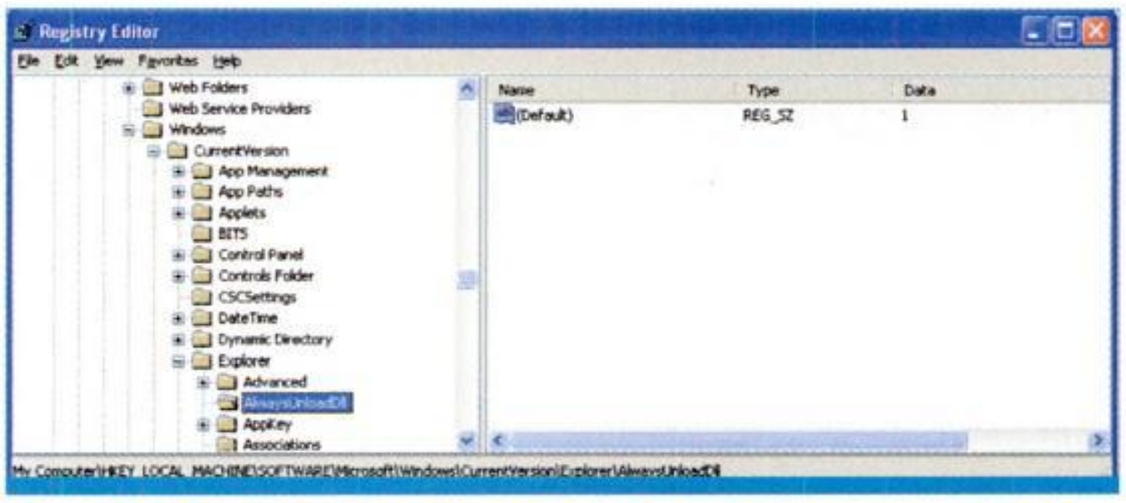


Don't deal with DOS-style file names when you don't have to. Tank the 8.3 file names right here.

8 FREE UP MEMORY BY FLUSHING DLL'S

DLL's, or dynamic link libraries, are literally all over your computer's hard drive. They're little bits of code that contain various functions or information that Windows software can call into use when necessary. When a program calls a DLL, Windows will thoughtfully cache it into main memory. That's fantastic: it makes the program run very quickly. Later, you'll probably close a program that called one or a number of DLL's. Does Windows, with equal thoughtfulness, remove them from memory? You probably guessed that it just may not.

You can hack the registry to make sure it kicks dormant DLL's out of memory to free up resources. Navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer. Create a new key (if one doesn't already exist) called AlwaysUnloadDLL. The key should contain a string called (Default) and you should set the value to 1. Reboot for this change to take effect. To reverse the effects of this hack, simply set the value of the (Default) string to 0.



Force Windows to sweep unused DLL's out of memory with this registry hack.

9 AUTOMATICALLY CLOSE PROGRAMS THAT STOP RESPONDING

Sometimes, programs can be oh-so-helpful. For instance, when a program crashes it often just sits there, hogging memory and even CPU cycles while doing nothing. If you click on its window, it oh-so-helpfully notes that it's "not responding." Then it continues to sit there, taunting you—demanding to know what your next move might be. Usually, you bang the three-finger salute (Control-Alt-Delete) and force it to close via the Task Manager. Hack the registry to make Windows automatically close programs that stop responding.

Your destination in the Registry Editor is HKEY_CURRENT_USER\Control Panel\ Desktop. Look for a string called AutoEndTasks and

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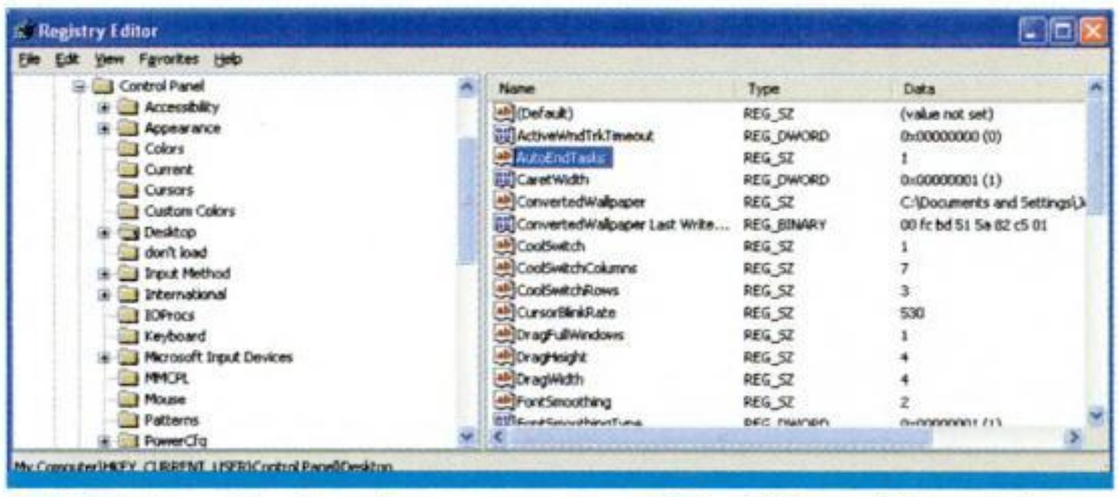
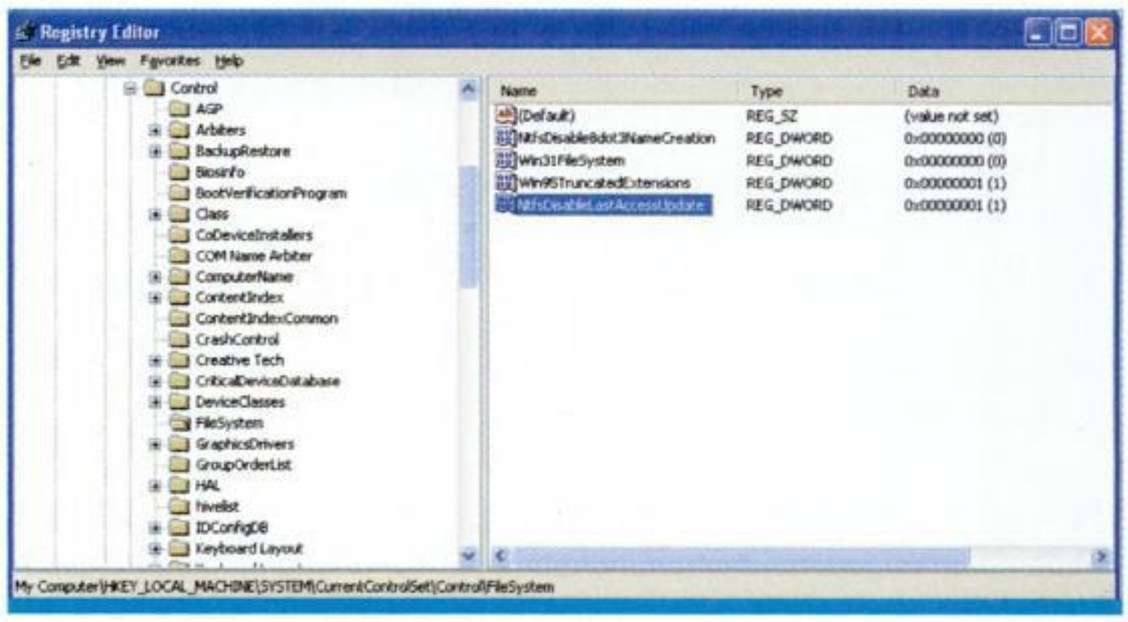
modify its value to 1. Close the registry and reboot the machine. From that point on, if an application hangs, it should just go away. If, for some reason, you *want* locked-up apps to stay open until you shut them down manually, set the value to 0.



Tell Windows to close hung apps by editing this registry string.



Disable Windows' habit of recording the last time you accessed various folders.

10 DISABLE THE "LAST ACCESS" TIME STAMP

Windows likes to keep track of all kinds of things you may not have known it was recording. For instance, whenever you access a folder, Windows updates it—and the entire path to that folder—with a stamp that indicates the last time that folder was accessed. That's outstanding, if you really care how long ago you last visited, say, the Windows\System32 folder—but you probably don't. What's more, it obviously takes time, resources, and CPU cycles for Windows to record that superfluous information.

Open RegEdit and navigate to HKEY_LOCAL_MACHINES\System\CurrentControlSet\Control\FileSystem. If you don't see such a DWORD value, create one called NtfsDisableLastAccessUpdate. Modify its value to 1. Then close the Registry Editor and reboot. Note that the last recorded time stamps will remain associated with the Windows folders; they simply will no longer be updated.

12 KEEP WINDOWS' CORE DATA IN MAIN MEMORY

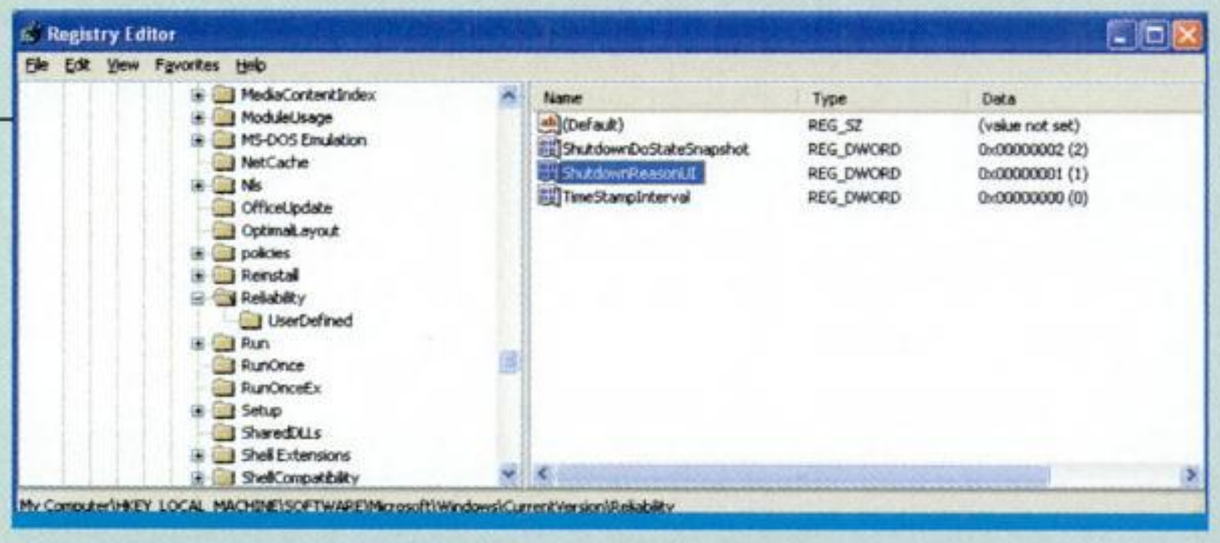
Windows loves its paging file, and the operating system isn't afraid to use it. That's fine for programs that require paging files, or for when Windows runs low on system memory and has to stuff some data somewhere. Sometimes, though, Windows will drop its core files, like driver and kernel files, into the hard drive–based paging file, which can slow down the system's responsiveness considerably. It happens more often on systems with a limited amount of memory, and Windows can even dump its core files when there appears to be plenty of free RAM.

This hack won't result in a performance increase, but it will prevent the possibility of a performance decrease thanks to somewhat goofy memory management. Open the Registry Editor and find your way to HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Session Manager\Memory Management. Find the DisablePagingExecutive DWORD value and set it to 1. Close the Registry Editor and reboot, and Windows will keep its important stuff in main memory.

11 ENABLE SHUTDOWN EVENT TRACKER

Some people might consider this an oxymoron: there's a registry subkey under a Windows key called "Reliability." We've all experienced mysterious shutdowns, or errors during shutdown, that were never fully explained. By default, Windows doesn't record a reason for its crashes (perhaps so that it can deny that they occurred in court?), whether or not they were initiated by the user. You can, however, make it do so through the registry.

Open RegEdit and head on over to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Reliability. Look for the DWORD value ShutDownReasonUI; if it's not there, create one, and set its value to 1. Shut down the Registry Editor and reboot the system. From that point on, Windows will record the reason it shuts down in the Event Viewer, which you can access through Control Panel's Administrative Tools app.



ABOVE: Make this registry hack to the "Reliability" key to enable event logging of Windows shutdowns.

LEFT: The Event Viewer now logs the reason Windows shuts down.

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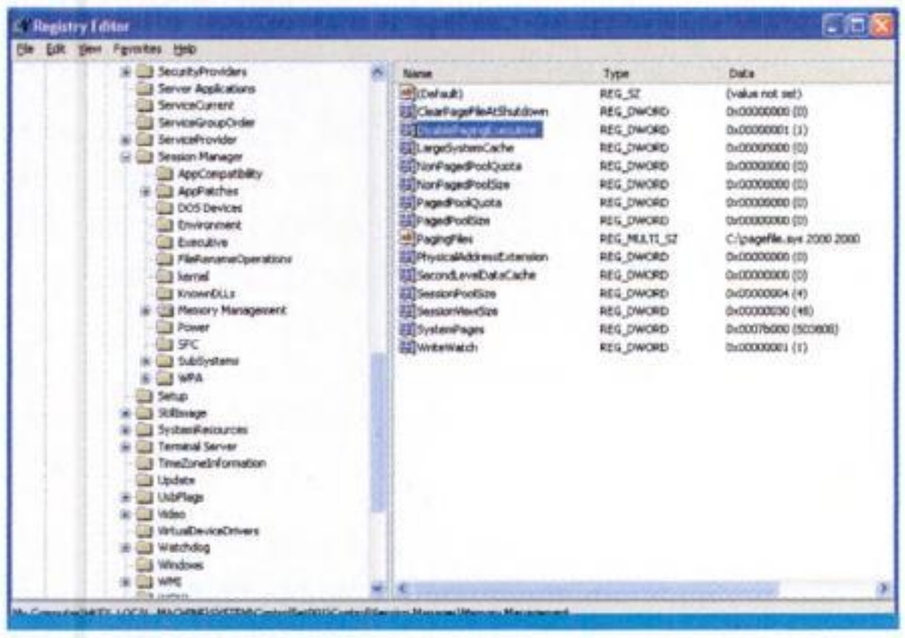
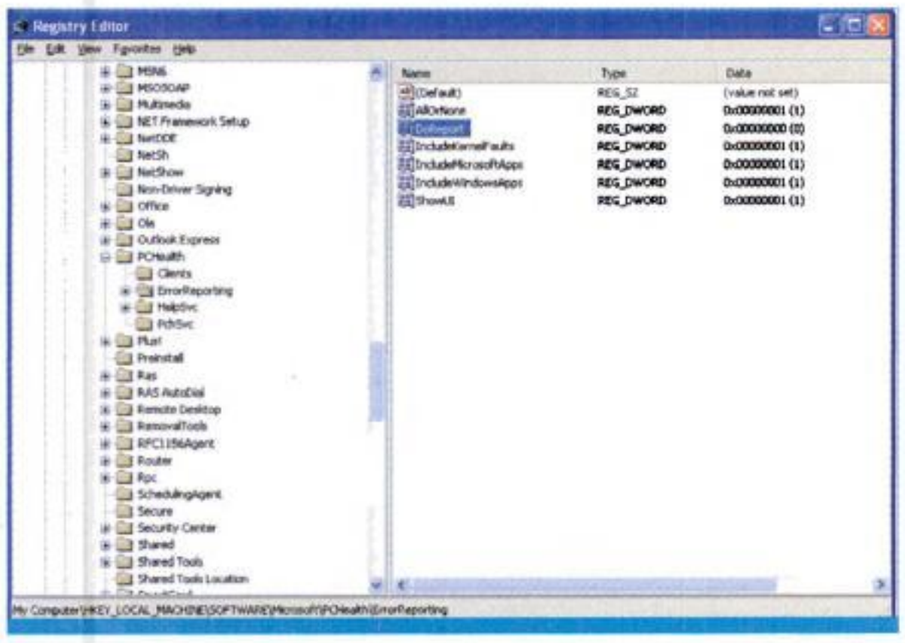


Prevent Windows from paging out its kernel by editing this DWORD value.

13 STOP ERROR-REPORTING AFTER A PROGRAM CRASH

It's bad enough when a Windows XP program crashes. To add insult to injury, Windows hurls a dialog box in your face demanding to know whether you wish to report the error to Microsoft, and heaven knows what happens to it there. The Microsoft technicians must get thousands of those error reports each day. Windows tends to do this even if you've turned off the error-reporting service, but you can put a stop to it for good.

Open the Registry Editor and wander over to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\PCHealth\ErrorReporting. Find the DWORD value entitled DoReport, and change its value to 0. The next time a program crashes, it should just leave you alone and not mock you by offering to throw another error report on the pile over at Microsoft. You know what to do by now should you want to miss the error reports (though you may want to consider therapy if you do)—just change the value to 1.

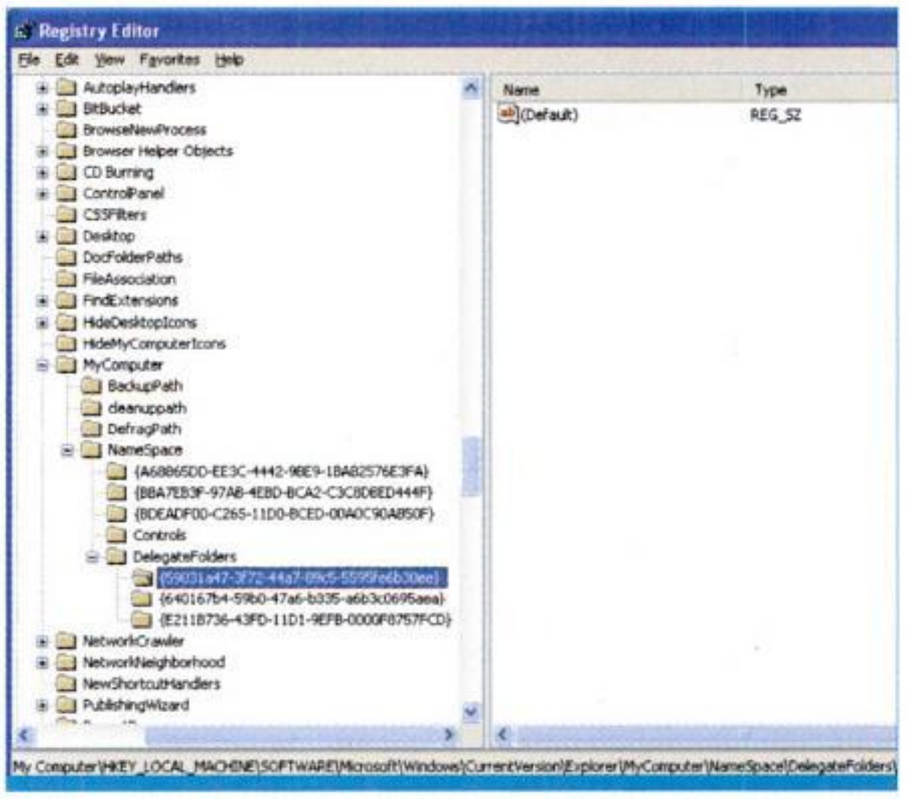


Shut down error-reporting with finality by editing this DWORD value.

14 TERMINATE THE SHARED DOCUMENTS FOLDER

Windows XP, in an effort to make networking easy for just about anybody with a pulse, automatically creates a shared folder in its file system known as the Shared Documents folder. Anything that ends up in that folder is visible to anyone else on a given network, unless the IT department has locked down Windows' peer-to-peer sharing capability. While the Shared Documents folder can be useful in the right hands, it can also be a force of evil in the *wrong* hands. You can't get rid of it very easily, either. Try to delete it by right-clicking on it in My Computer and you'll discover that there isn't even such an option.

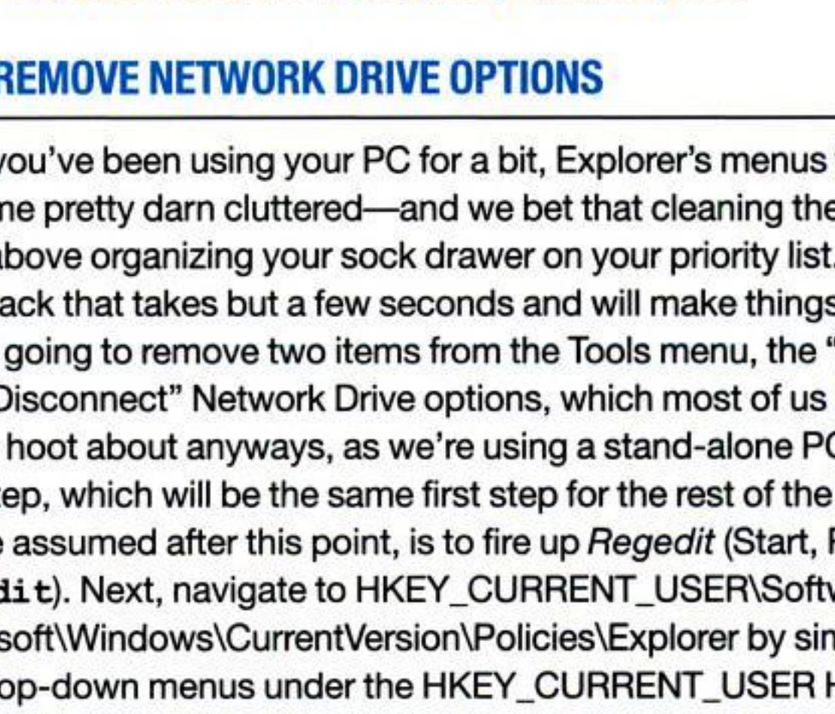
You can get rid of it through the registry. First, make sure the Shared Documents folder doesn't contain any files that you care about. If it does contain some, move them somewhere else. Then, start RegEdit and navigate to **HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\MyComputer\NameSpace\DelegateFolders**. Find the key with the descriptive and user-friendly title of {59031a47-3f72-44a7-89c5-5595fe6b30ee}, and delete it. Then, close the Registry Editor and reboot. Go to My Computer and you'll notice that pesky automatic share is gone.



Don't want, like, or need the Shared Documents folder? Delete this registry key and it's gone.

15 REMOVE NETWORK DRIVE OPTIONS

After you've been using your PC for a bit, Explorer's menus tend to become pretty darn cluttered—and we bet that cleaning them up is right above organizing your sock drawer on your priority list. Here's a little hack that takes but a few seconds and will make things neater. We're going to remove two items from the Tools menu, the "Map" and "Disconnect" Network Drive options, which most of us don't give a hoot about anyways, as we're using a stand-alone PC. The first step, which will be the same first step for the rest of the tips and will be assumed after this point, is to fire up *Regedit* (Start, Run, type **`Regedit`**). Next, navigate to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer by simply using the drop-down menus under the HKEY_CURRENT_USER Hive. Create a new DWORD entry called "NoNetConnectDisconnect," and give it a value of 1. Do this by right-clicking anywhere in the right window pane, selecting New, and DWORD Value. Now, simply close *Regedit* and reboot. To re-enable these settings later, change the value to 0 or delete the entry.



Clean up some of Explorer's clutter with this handy hack.

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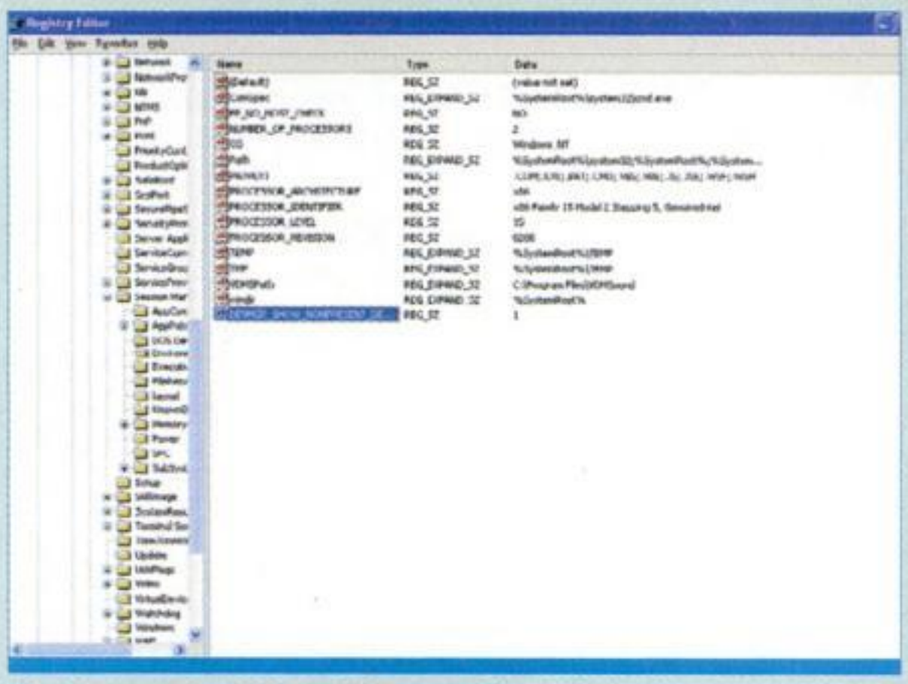
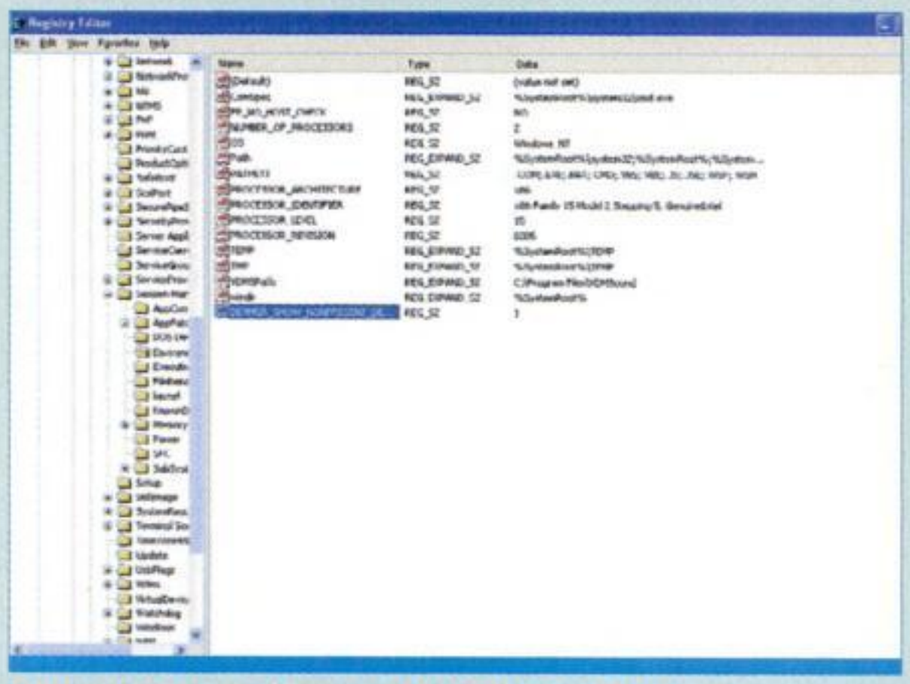
16 SHOW HIDDEN DEVICES IN DEVICE MANAGER BY DEFAULT

There's an option in the View pull-down menu of Device Manager to get it to show hidden devices. Some programs (like the nasty stuff contained on some Sony CDs, or the notorious *StarForce* copy-protection software) stash drivers or "virtual hardware" deep in the confines of your system, and the only way to make them visible is to use that menu option. Unfortunately, once you close Device Manager, it returns to its default state to hide hidden entries until you tell it once more to show them.

You can force Device Manager's show-hidden-entries option to stay on, and therefore cause Device Manager to always make hidden devices visible. Open the Registry Editor. Head to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Environment and look to see if there's a string called DEVMGR_SHOW_NONPRESENT_DEVICES. If it's not there, create one, and modify the value data to 1. Reboot, and explore Device Manager. You may be surprised at what you find there. To turn off this option, modify the value to 0.



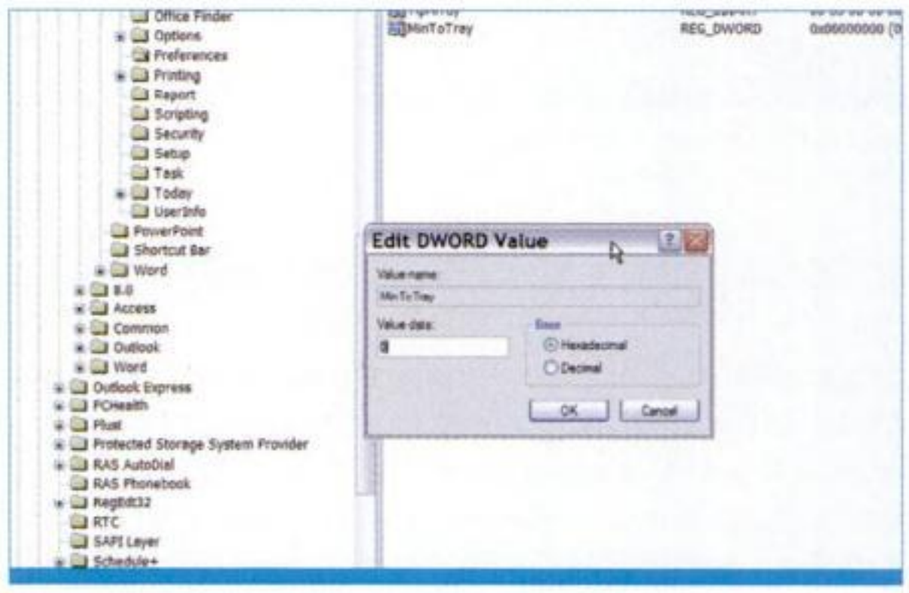
Find or make this string, and set it to 1



You might find some interesting entries in Device Manager

17 MINIMIZE OUTLOOK TO THE SYSTEM TRAY

That wasn't tough at all, was it? Good. Here's another quickie that makes XP a bit more efficient if you rely heavily on *Microsoft Outlook*, which most of us do. You can have XP automatically minimize *Outlook* to the System Tray each time you start the program. Browse to HKEY_CURRENT_USER\Software\Microsoft\Office\10.0\Outlook\Preferences. Add a new DWORD value named MinToTray, and set it to 1. Next time you restart *Outlook*, it will automatically minimize to the System Tray.



Use *Outlook* more efficiently with this little hack.

18 IMPROVE THE CONTEXT MENU

So far, so good…and we bet you're starting to have a little fun, too. Nothing brings out your inner geek like editing the Registry. Next, we're going to add "Copy to folder" and "Move to folder" options to the right-click context menu, which should save you a lot of time, if—like us—you move a lot of files around on your PC. Go to HKEY_CLASSES_ROOT\AllFilesystemObjects\shellex\ContextMenuHandlers. Create a new key called "Copy To" and set its value to… deep breath: {C2FBB630-2971-11D1-A18C-00C04FD75D13}. Next, create another new key called "Move To" and set the value to… another deep breath: {C2FBB631-2971-11D1-A18C-00C04FD75D13}. Exit the Registry and the change is immediate. Now, when you right-click a file you'll be able to move or copy the file quickly using the new options.

19 KILL COMPRESSION

The Disk Cleanup wizard is a handy way to find out what unused files you can get rid of to save disk space, but it also calculates the space you'll save by compressing your drive. We don't like to use compression, so we're going to disable it by browsing to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\VolumeCaches\CompressOldFiles. Clear the value from the Default key. The next time you start Disk Cleanup, it will skip the compression analysis.

20 SECURE YOUR PAGEFILE

The Windows swapfile (refers to Windows virtual memory, see page 12 for more on the swapfile) can contain anything that might be in RAM, including sensitive data like passwords. To set XP to automatically erase any info contained in the swapfile at shutdown, go to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management and add a DWORD value named "ClearPageFileAtShutdown." Set it to 1, reboot your PC, and your machine will automatically erase the contents of your pagefile

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when you shut down. Be aware that this will make your PC take longer to shut down, sometimes adding as much as 20-30 seconds to the process. If you find the trade-off's not worth the enhanced security, turn this option off by setting the value to 0 or by deleting the DWORD.

21 STOP THE WMP RECENT FILES LIST

If you want to keep what files you're playing in Windows Media Player a secret—and we can't imagine why—you can use the Registry to kill the "Recent Files" list. Navigate to the HKEY_CURRENT_USER\Software\Microsoft\MediaPlayer\Preferences Registry subkey. From the Edit menu, select New, Binary Value, and enter a name of "AddToMRU," then press Enter. Double-click the new value, set it to 00 to disable the list, or 01 to enable it, then click OK.

You can clear current entries from the most recently played files list by either deleting the HKEY_CURRENT_USER\Software\Microsoft\MediaPlayer\Player\RecentFileList Registry subkey or deleting individual entries under this subkey. To clear streamed media entries, delete the HKEY_CURRENT_USER\Software\Microsoft\MediaPlayer\Player\RecentURLList subkey.

Windows Media Player
File View Play Tools Help
Playlist1
Home Music Movies Entertainment Radio Current Events Site Index
Search
Popaholics
Janet Jackson
Janet Jackson has entranced the entertainment world for over 25 years, first through television, then with her music and films. But it is music that is at her heart. "The one thing we all have in common is music," says Janet, "and music moves me"
Exclusive! Full CD
Exclusive video!
"Just A Little While"
Watch hot new
Off Damita Jo
"I Want You"

Keep all those Janet Jackson videos a secret!

22 REJECT THE DUMB SEARCH INTERFACE

Do you miss the simplicity of the old Windows 98/2000 search utility? Does it make you angry that Windows XP dumbed down your search options and gave you a bothersome Search mascot? Here's how to not only ditch the mascot, but also revert to the original, more powerful search interface.

Open *Regedit* by going to Start, Run, and typing **`regedit`** in the Open box. Then browse to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\CabinetState\ and create a new String Value called "Use Search Asst." Then set the value to "no".

Searching made better through a little hacking.

23 TURN OFF THE WINDOWS PICTURE AND FAX VIEWER

You don't really want to use this, do you?

The *Windows Picture and Fax Viewer* is set as the default image viewer for all sorts of file types in Windows XP. Unfortunately, choosing a new program as the default in the File Types window won't change this, and there's no option in the Windows interface that can disable this component, which is extremely frustrating. Thankfully, we can fix Microsoft's blunder with a Registry hack: Navigate to HKEY_CLASSES_ROOT\SystemFileAssociations\image\ ShellEx\ ContextMenuHandlers. Delete the ShellImagePreview key. Close *Regedit* and the change takes place immediately.

24 SET A CUSTOM RESOLUTION

If you hate being limited to XP's options for your desktop resolution, you can set your desktop to any display size you'd like. Just make sure you don't exceed the min/max recommendations for your videocard and monitor, as you can damage them if you do. Navigate to HKEY_CURRENT_CONFIG\System\CurrentControlSet\Control\VIDEO\{Address of primary video card}\0000\. The DefaultSettings.XResolution DWORD represents the Y axis. Edit its value as a decimal to what you want it to be, such as "1152." Now, do the same to the DefaultSettings.YResolution DWORD, which is the X axis. Edit this value to match your Y setting, "863," in this case. Reboot your machine, and you're done.

Bend your desktop resolution to your will.

25 KEEP ON HACKIN'

These hacks are just some of the thousands of tweaks the Windows registry has lurking in its many folds. Registry tricks for everything from renaming special folders to tweaking DNS caches, and just about anything else you can think of, are only a few mouse-clicks away. Check out the Windows Registry Guide at http://www.winguides.com/registry/, a host of registry edits brought to you by the Elder Geek at http://www.theeldergeek.com/registry_edits.htm, and a batch of registry hacks at Kelly's Corner (located at http://www.kellys-korner-xp.com/xp_reg_edits.htm).

However, if diving into RegEdit still unnerves you, you can still get a lot of hacking in with the much-easier-to-use TweakUI PowerToy, which we've outlined on page 62. MPC

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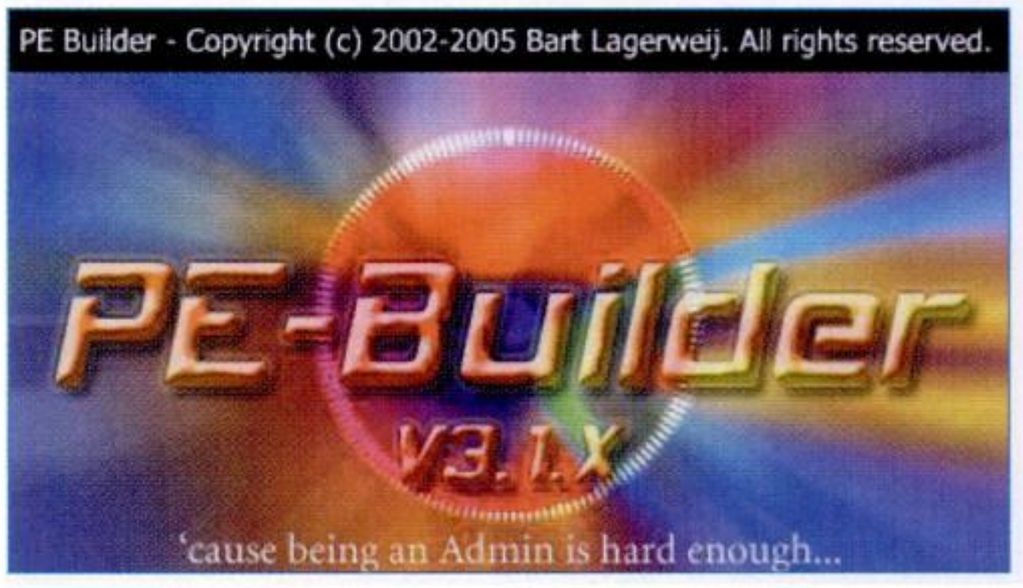
Make a Bootable CD-ROM

Retain access to your data even when Windows isn't cooperating

TIME 45:00 MINUTES

If Windows doesn't feel like starting up and your files are being held hostage, booting into a DOS environment with a floppy disk or floppy emulation won't do you much good because you can't access NTFS partitions. This floppy-less method gives you access to all your files (provided the problem isn't with your drive; if it is, you have our sympathies).

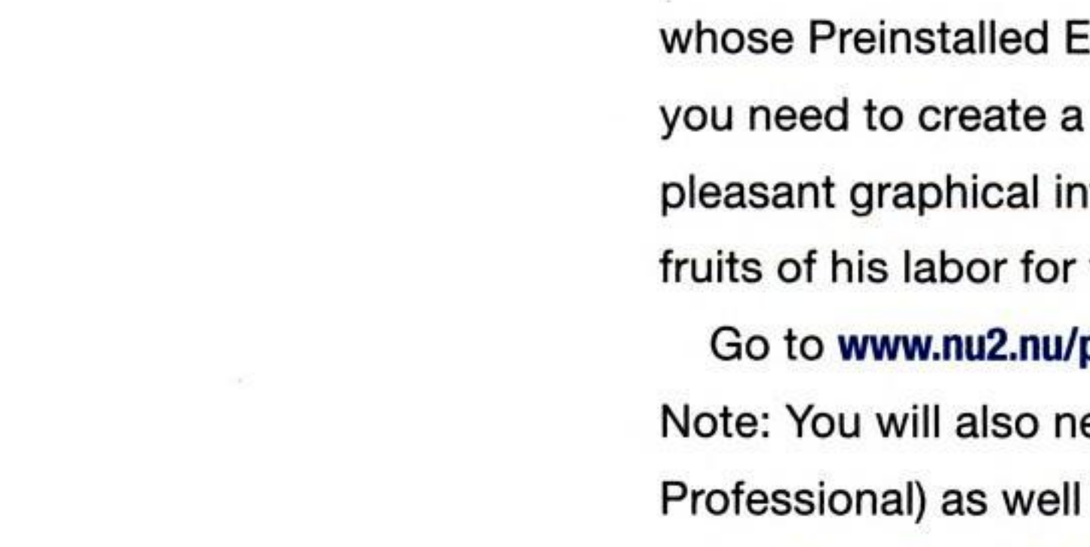


The emblem of Bart Lagerweij's Preinstalled Environment bootable CD grindhouse. If you're serious about making sophisticated bootable discs, you'll be spending a lot of time with *PE Builder*.

Fortunately, most of the hard work's been done for you by Bart Lagerweij, whose Preinstalled Environment (called BartPE for short) has got everything you need to create a bootable CD complete with network support and even a pleasant graphical interface. Even more charming is that he's giving away the fruits of his labor for free. Yes, that's "free" as in "beer." So let's go shopping.

Go to **www.nu2.nu/pebuilder** and download *PE Builder* (now at version 3.1.3). Note: You will also need your original Windows XP installation disc (Home or Professional) as well as Service Pack 2. You can download Service Pack 2 at **www.microsoft.com/windowsxp/sp2/default.mspx**.

BY LOGAN **DECKER**



A simple command-line switch will update your Windows XP installation files to include Service Pack 2.

1 Rip your OS discs to the hard drive

Put your Windows XP disc in the drive and copy the contents to a folder on your PC, preferably close to the root directory of your C: drive (you'll understand why in a second). Next, create another folder for SP2 and move the contents of the disc into that folder. Now click Start > Run and type cmd to open a DOS box. Navigate to the folder where you saved the SP2 installer—if you place this file near the root directory it will be much easier to access; you can delete it later. Type the name of the SP2 installer followed by the –s: command-line switch, and then add the path to the Windows XP disc files you copied earlier. Do not put a space after the "s:" For example, if your WinXP files are located at c:\winxp, then type xpsp2.exe -s:c:\winxp. SP2 will integrate itself into the Windows XP installer.

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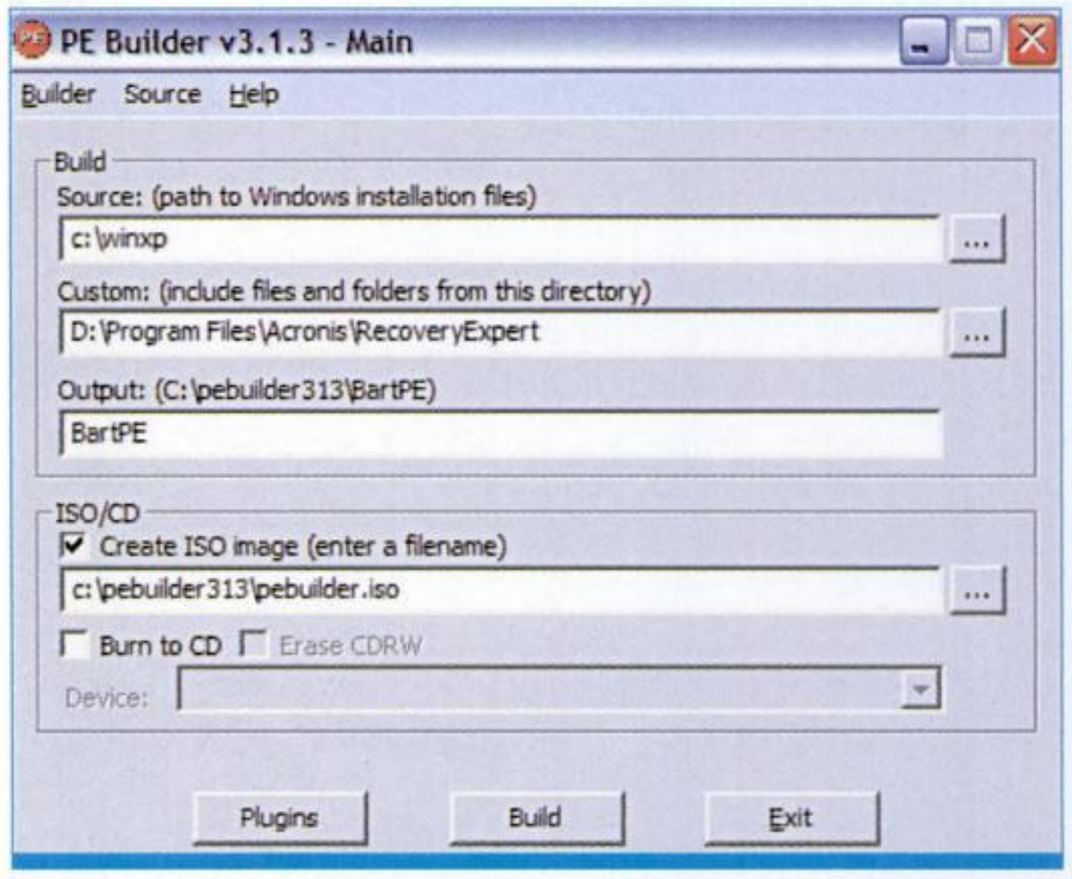
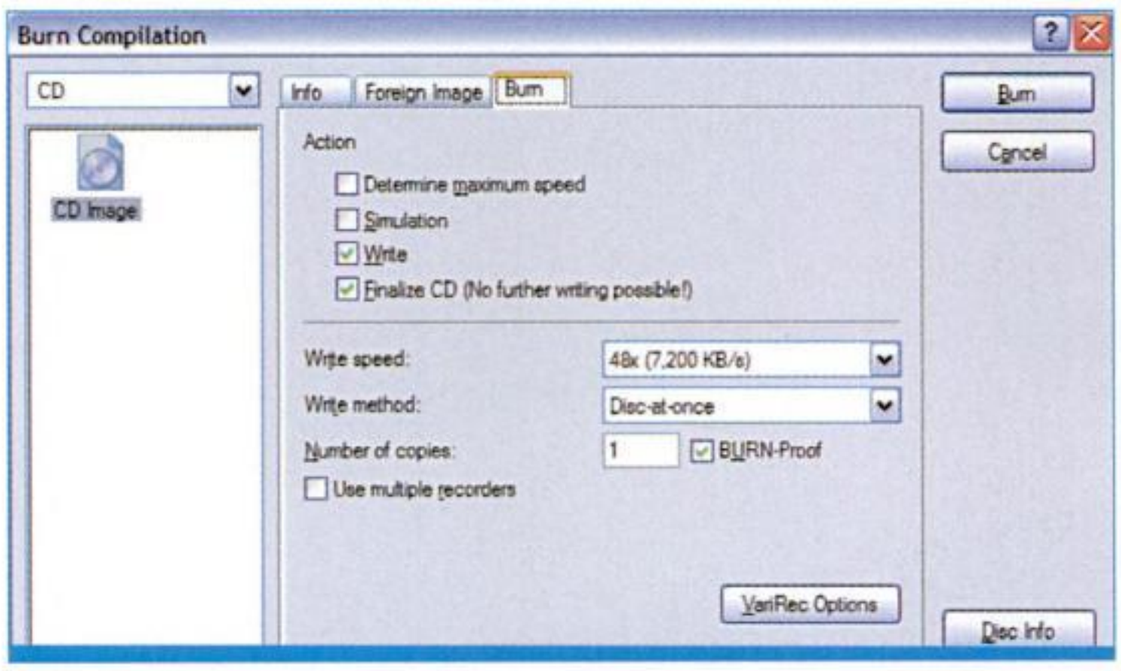
2 Configure PE builder

Launch *PE Builder*. Under Source, enter the path to your Windows XP installation files. Under Output, select a destination directory for your finished disc image. Under ISO/CD, you have the option of saving the image as an ISO disc image, burning the results directly to CD, or both. You may also add any folders and files (such as utilities or data-recovery apps) by placing them all into one directory and entering the directory path under Custom.



From *PE Builder's* humble command center, we're opting to create an "image" of our bootable disc in the ISO format rather than burn directly to disc, so we can alter the contents later if necessary.



3 Bake your boot disc

PE Builder also gives you the option of adding plugins developed by Bart himself or clever third parties. These run the gauntlet from ASPI layers to disk utilities, *Ad-Aware* to mouse drivers, and they'll all be automatically added to your compilation (you can find scads of them at **www.nu2.nu/pebuilder/#plugins**). Now click Build and kick back. When *PE Builder* is done, you'll have a fresh, bootable CD-ROM (unless you chose to make a disc image instead—all you have to do is burn this image to a disc with any disc-mastering program).

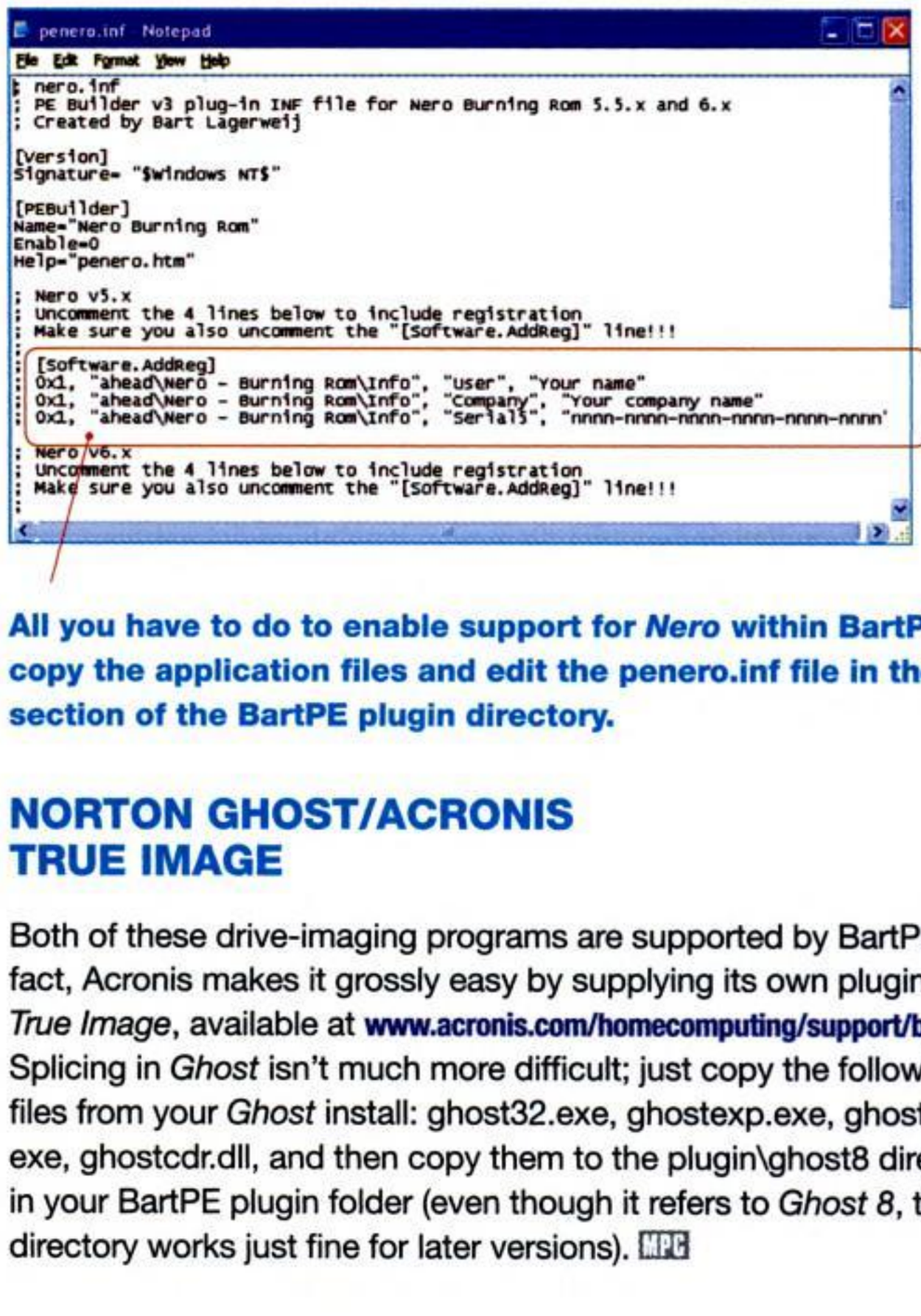
The final step is to burn your disc image to a CD. Select Disc-at-once recording, and if you're worried about compatibility with other PCs, notch down the burn speed to 8x or 16x.

4 Fun with BartPE

For the real go-getters out there, creating a BartPE ISO image is only the beginning. You can find a list of the plugins included in the BartPE download at the BartPE site, as well as links to other plugins available from third parties (including commercial software developers). Here are two must-haves for a bootable "rescue" CD that won't leave you in the lurch after a disaster.

NERO

Your first priority on a wobbly system will most likely be evacuating your data. If you don't have an external drive to copy everything onto, you'll need to burn it to CD or DVD instead. BartPE conveniently comes with a plugin for *Nero* built in, but in order to use it you'll need to copy all the files from your *Nero* install (everything within the *Nero* application folder) into the plugin\nero burning rom\files directory of your BartPE plugin folder. Then open the penero.inf file in the Nero plugin folder using *Notepad*. Look for the line that says [Software. AddReg] underneath your version of *Nero* (5.x or 6.x). Note that this line and the three beneath it are preceded by a semicolon and some spaces; remove the semicolon and the spaces before all four lines, and edit the last three lines to reflect the user name, company, and serial number from your *Nero* installation. Save the penero.inf file, and *Nero* will be available from the BartPE CD you created.


penero.inf Notepad
File Edit Format View Help
; nero.inf
; PE Builder v3 plug-in INF file for Nero Burning Rom 5.5.x and 6.x
; Created by Bart Lagerweij
[Version]
Signature= "$Windows NT$"
[PEBuilder]
Name="Nero Burning Rom"
Enable=0
Help="penero.htm"
; Nero v5.x
; Uncomment the 4 lines below to include registration
; Make sure you also uncomment the "[Software.AddReg]" line!!!
;
;[Software.AddReg]
;0x1, "ahead\Nero - Burning Rom\Info", "User", "Your name"
;0x1, "ahead\Nero - Burning Rom\Info", "Company", "Your company name"
;0x1, "ahead\Nero - Burning Rom\Info", "Serial5", "nnnn-nnnn-nnnn-nnnn-nnnn-nnnn"
; Nero v6.x
; Uncomment the 4 lines below to include registration
; Make sure you also uncomment the "[Software.AddReg]" line!!!
;

All you have to do to enable support for *Nero* within BartPE is copy the application files and edit the penero.inf file in the *Nero* section of the BartPE plugin directory.

NORTON GHOST/ACRONIS TRUE IMAGE

Both of these drive-imaging programs are supported by BartPE. In fact, Acronis makes it grossly easy by supplying its own plugin for *True Image*, available at **www.acronis.com/homecomputing/support/bartpe**. Splicing in *Ghost* isn't much more difficult; just copy the following files from your *Ghost* install: ghost32.exe, ghostexp.exe, ghostsrv.exe, ghostcdr.dll, and then copy them to the plugin\ghost8 directory in your BartPE plugin folder (even though it refers to *Ghost 8*, this directory works just fine for later versions). MPC

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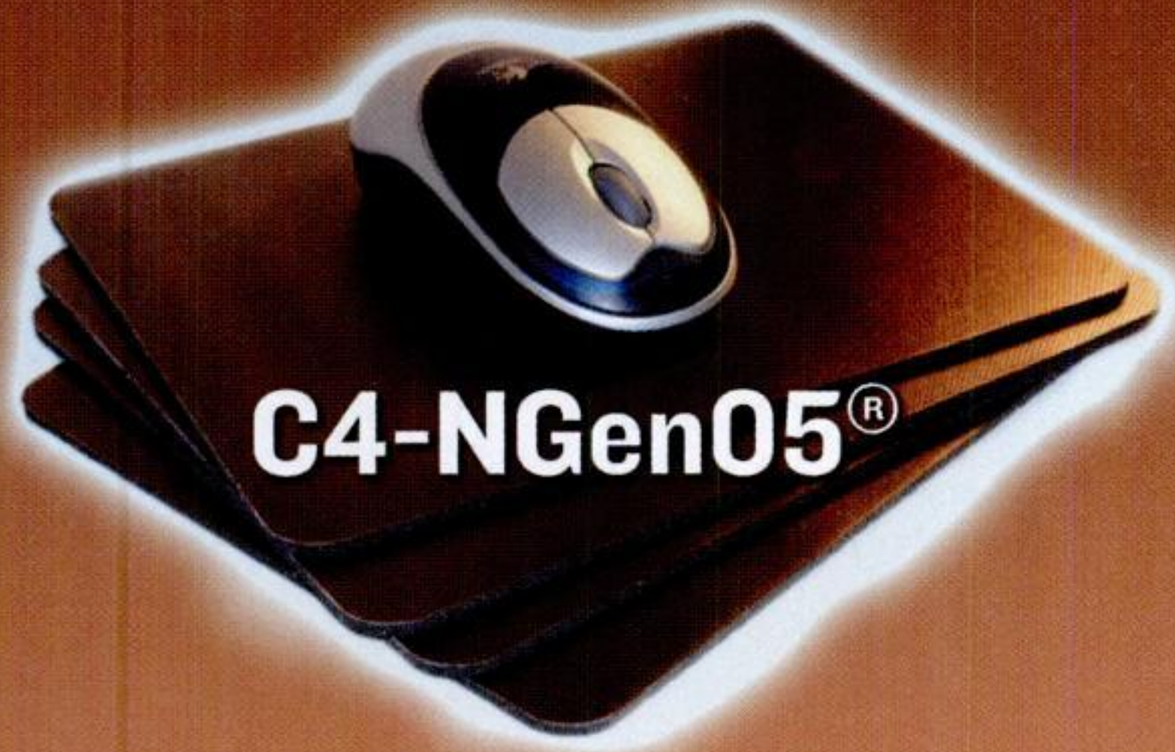

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Windows VISTA Comes Together

Microsoft's next version of Windows will be around for 10 years, when it finally arrives. Here's a sneak peek at the tricks and treats you can expect from Vista when it's assembled in 2006. BY WILL SMITH

So here we are. Four years after Microsoft released Windows XP, the once-perfect operating system is plagued by insecurities, viruses, and spyware. No one's safe—even *Maximum PC* editors have suffered under these scourges. Sure, Service Pack 2 has helped the problem some, the firewall has slowed the distribution of worms, and *Internet Explorer* is a bit more secure, but spyware is still everywhere.

The answer—at least according to Microsoft—is Windows Vista. Vista, which you may know by its code-name Longhorn, is the next major release of Windows. Microsoft's goal with the new OS is to streamline and simplify. Key components of the OS have been rebuilt from the ground up. Unnecessary legacy components have been excised. Legacy code that remains necessary for the time being has been compartmentalized, for easy and safe removal later. Major portions of the OS have been revamped, with an eye toward the way people want to use their computers now, not the way they did in 1995, when PCs (and graphical interfaces) were a novelty for most computer users.

We got our grubby mitts on the first beta of Vista, and have prepared a guided tour for you—with loads of photos and a feature-by-feature walk-through of the new OS. Keep in mind that this is just the first beta. Before the fledgling OS is ready to fly late next year, the code monkeys at Microsoft will continue to tweak the user interface, add new features, and refine existing elements. The vast majority of the final changes should be in place by the time Microsoft ships Beta 2 this Srping: What you see here could (and probably will) change before Vista launches in late 2006. This is a hint of what's to come rather than an iron-clad prophecy of the future.

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New Technology

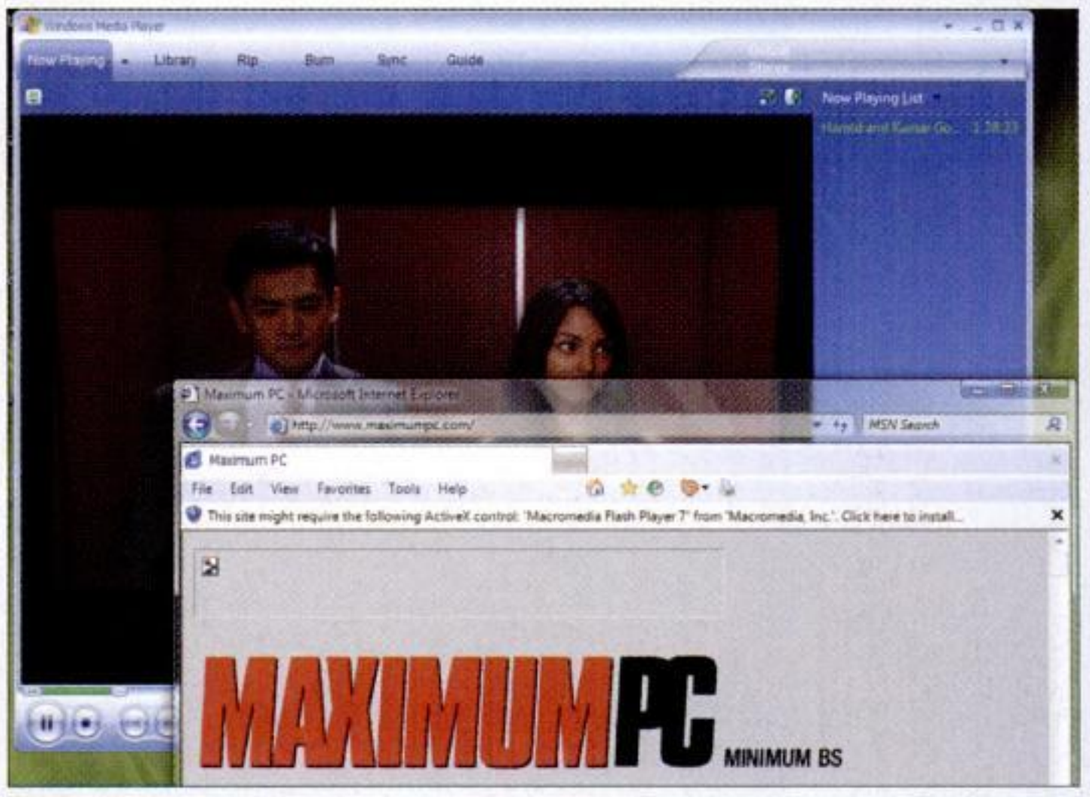
Microsoft added tons of new functionality to the underpinnings of the OS in order to keep Vista running at full speed despite increased hardware requirements

Sometimes you just have to start over and do it the right way. That's what Apple did with OS X, and it's paid off in huge performance and reliability dividends. Although there aren't any insurmountable flaws in Windows XP, there's tons of legacy code designed to support applications that date back to a time before the Internet. With Vista, Microsoft is letting go of much of the legacy past, and we salute that.

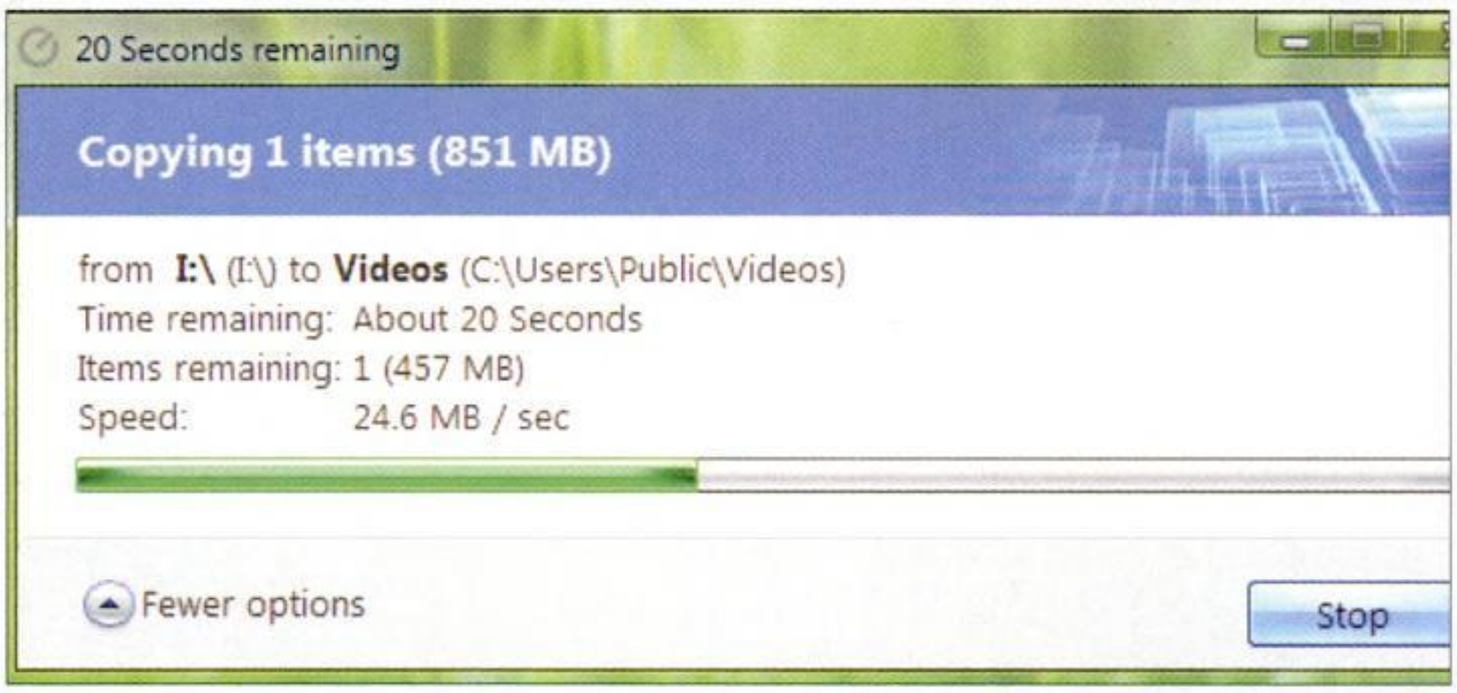
LONGHORN DISPLAY DRIVER MODEL

The biggest news in Vista is its departure from the GDI—the Graphical Device Interface—which has drawn everything on your Windows desktop since Windows 3.0. Replacing it is the Longhorn Display Driver Model (LDDM), which will almost certainly receive a new name before launch.

The LDDM is necessary to the transition from a 2D bitmap-based desktop renderer to Vista's vector-based 3D-rendered desktop—named Aero. Moving to a vector-based desktop is a good thing. Because vector-based images describe the shape of onscreen objects using math instead of simply placing pixels, everything Vista displays will be infinitely resizable. That's great for resizing windows, but it's even more helpful when you pair it with displays that sport greater-than-normal DPI. Instead of using an interpolation method to describe the extra pixels, Vista can simply calculate the extra pixels that should be present. The resulting image will be crisper and cleaner.



Vista's new user interface, Aero, uses the LDDM to draw transparent borders around every window in real time.


20 Seconds remaining
Copying 1 items (851 MB)
from I:\ (I:\) to Videos (C:\Users\Public\Videos)
Time remaining: About 20 Seconds
Items remaining: 1 (457 MB)
Speed: 24.6 MB / sec
Fewer options
Stop

We're not sure exactly what the Vista team had to do to pull this off, but the Time Remaining bar is actually accurate in Beta 1. We timed it!

So what about legacy content that requires GDI? It's easy: Vista emulates the GDI, draws the contents of the legacy app's window off-screen, then writes that render to a texture and applies it to the visible window. Microsoft claims there's a slight but unnoticeable performance hit. Our testing with legacy GDI apps backs that up.

DIRECTX 10

Rumors of DirectX's demise have been greatly exaggerated. Along with the introduction of the LDDM, Vista will also feature DirectX 10, a new, updated version of Direct3D that doesn't include a lot of the legacy cruft.

Let's talk about the removed or deprecated APIs first. DirectInput, DirectPlay, and DirectMusic won't appear in Vista. DirectInput has been supplanted by a new API designed for the Universal

What About 64-Bit Vista?

Despite a rumored "both versions in the box" launch strategy, the current word on the street is that the 64-bit version of Windows Vista will be packaged separately from the 32-bit edition.

By the end of 2006, when we expect Vista to ship, every shipping CPU should support the AMD64 extensions, and be capable of running the 64-bit version of the OS. But because Microsoft plans to ship the two versions separately, we expect that a relatively small number of people will actually take advantage of the 64-bit edition. Without lots of folks using 64-bit Vista, it's unlikely that smaller hardware manufacturers will ship 64-bit Vista drivers, leaving 64-bit users outta luck when it comes to connecting printers, RAID cards, and other devices. That's just no good.

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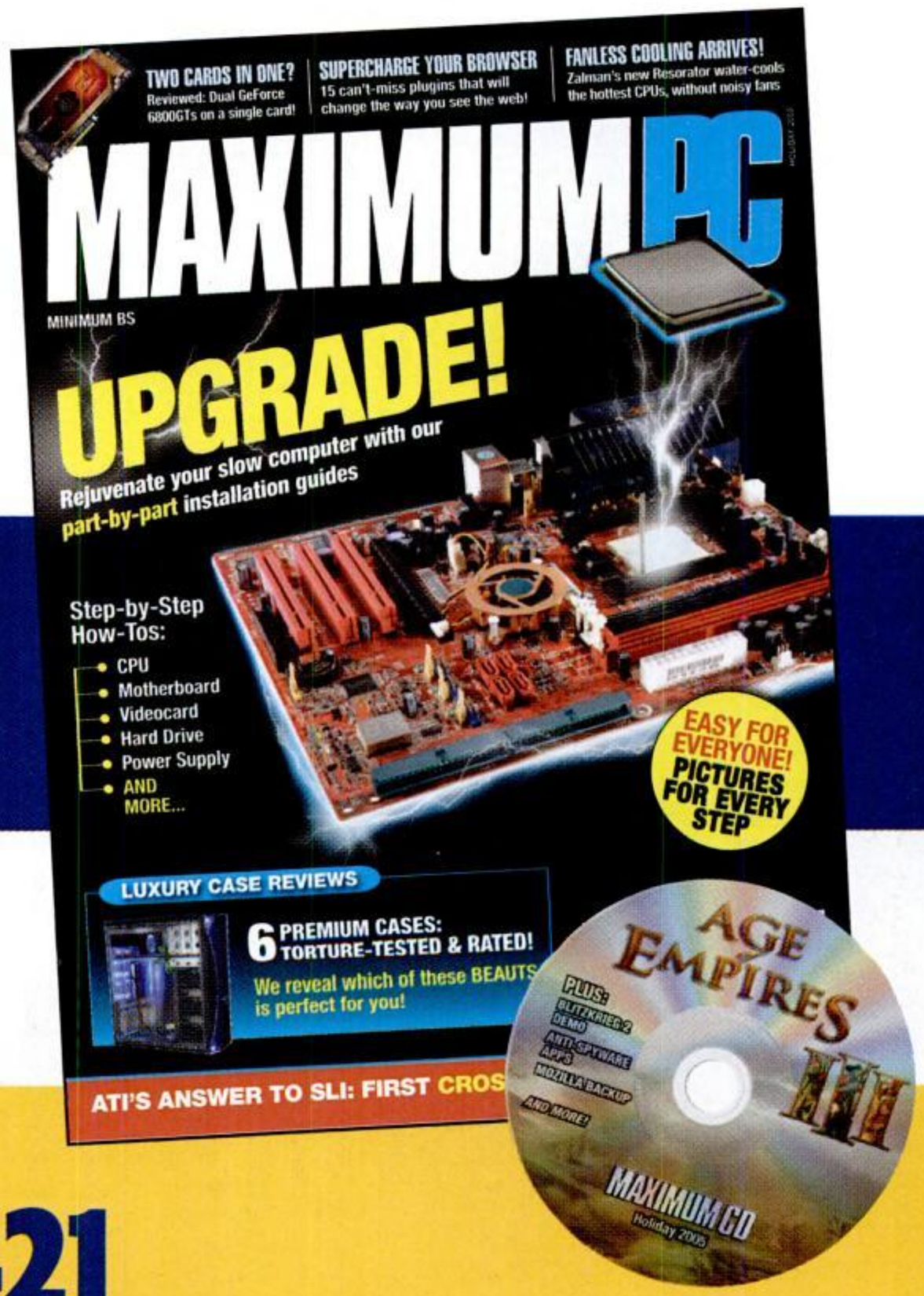

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Controller—the shared Xbox 360 and PC gamepad—as well as the basic Windows mouse-and keyboard-input APIs. DirectPlay is no longer necessary. It was originally designed for peer-to-peer gaming over a serial connection, and most multiplayer games today use more common Internet protocols. DirectMusic, which was used to create dynamic MIDI-based music in games, never really took off, and is being removed.

The biggest addition to DirectX 10 is support for geometry-shader programs. The geometry-shader units will sit in the rendering pipeline between the vertex shader and the pixel shader, and allow programmatic manipulation of every vertex rendered. The geometry shader lets developers manipulate primitives (connected groups of triangles that make up more advanced shapes) using shader programs. This should help alleviate memory-bandwidth bottlenecks, especially when rendering things like fur, hair, and shadow volumes.

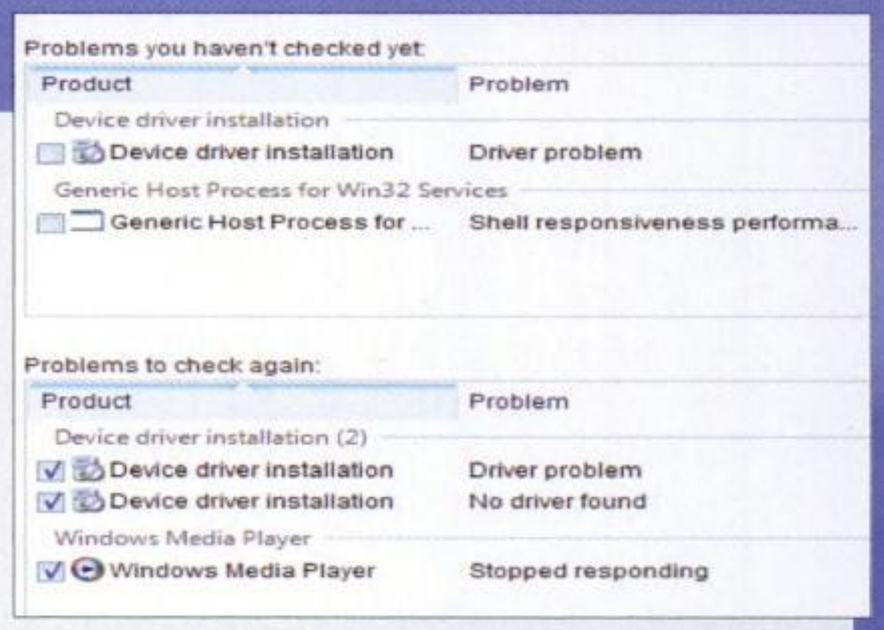
We're especially excited about Microsoft's promise to lay out an extremely specific set of hardware requirements, which must be met for a GPU to be considered DirectX 10-compliant. Unlike DirectX 9, DX10 cards will sport consistent bit depths and share a common base level of functionality.

WINSAT

The last thing anyone wants is a laggy 3D interface, which is a possibility now that drawing your desktop will be dependant on the performance of your 3D card. To prevent the Aero interface from being a negative rather than a positive, Microsoft has implemented performance instrumentation throughout the OS. In Vista, the WinSAT system measures tons of performance indices, from the time it takes your system to boot, to the time it takes to open the Start Menu, to the time it takes to resize windows.

Of course, measuring performance doesn't do any good if WinSAT doesn't help end users track down the problem and fix it. When you first boot your Vista rig, WinSAT benchmarks the entire system, and saves those numbers. If WinSAT detects a performance dip in any of its tests later on, it's smart enough to associate that slowdown with other changes to the system, such as software installs or driver updates, and provide the user with possible solutions.

In order to keep your operating system minty fresh, Vista automatically measures the performance of crucial Windows tasks. Should your perf numbers drop too low, the WinSAT will first let you know there's a problem, then give you several possible solutions to fix your problem.



ODDS AND ENDS

DRM TECHNOLOGIES

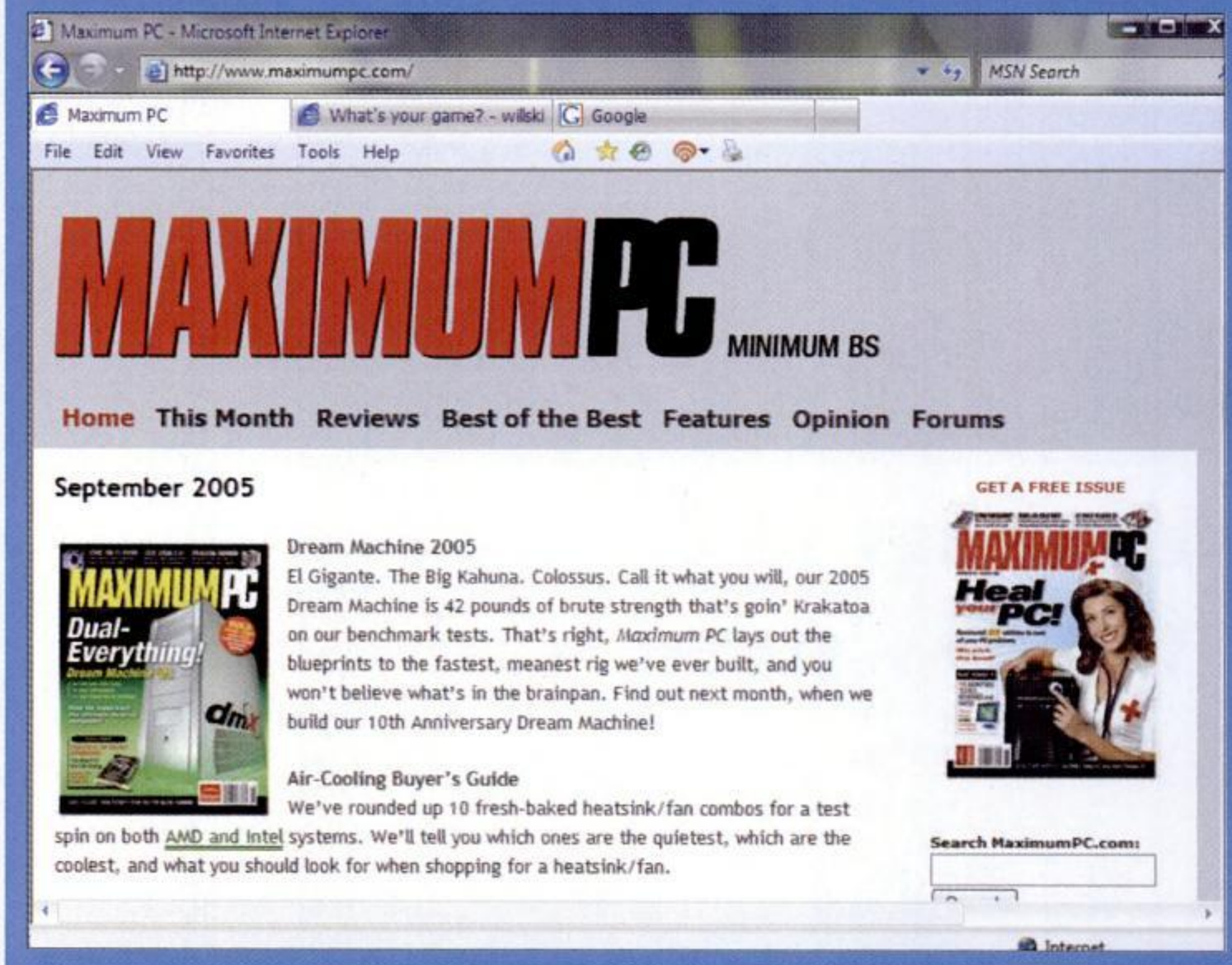
Vista will be the first version of Windows to ship with integrated hardware DRM technology, although Microsoft still claims it will be an opt-in "feature." Hardware-based DRM is not something we're happy about. Quite frankly, we don't appreciate anyone locking our data in a box for us, and not giving us the keys. As Vista is still more than a year out, and the Palladium-based tech isn't fully implemented yet, it's tough to say what the impact will be. We'll keep you posted as more details emerge.

INTERNET EXPLORER 7

Beta 1 of Vista also includes the first beta of *IE7*. We've not spent enough time to pass judgment yet, but it's certainly promising. In addition to some must-have features, namely tabs, there's also a nifty anti-phishing feature. When users suspect that a site is a phishing site, they press a button. That URL is then sent to a central server, and when enough users label it as a phishing site, all visitors using *IE7* receive a warning.

AERO GLASS

We didn't forget about the most exciting new tech in Vista, we've devoted an entire page to it. See the next page for a closer look at Aero Glass, Vista's new 3D-accelerated UI.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Vista Beta 1 also includes the first beta of *Internet Explorer 7*. Key additions include anti-phishing tech, RSS support, and *Firefox*-style tabbed browsing.

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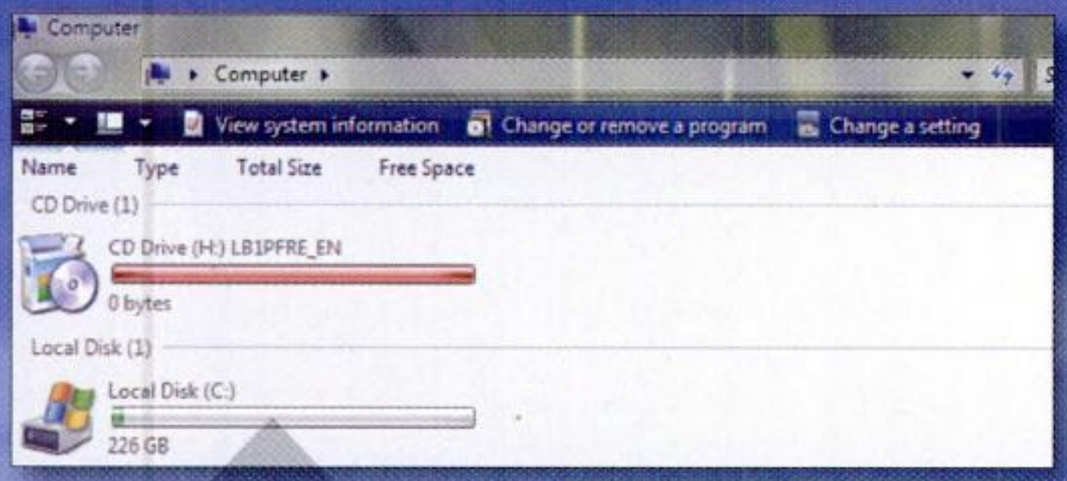
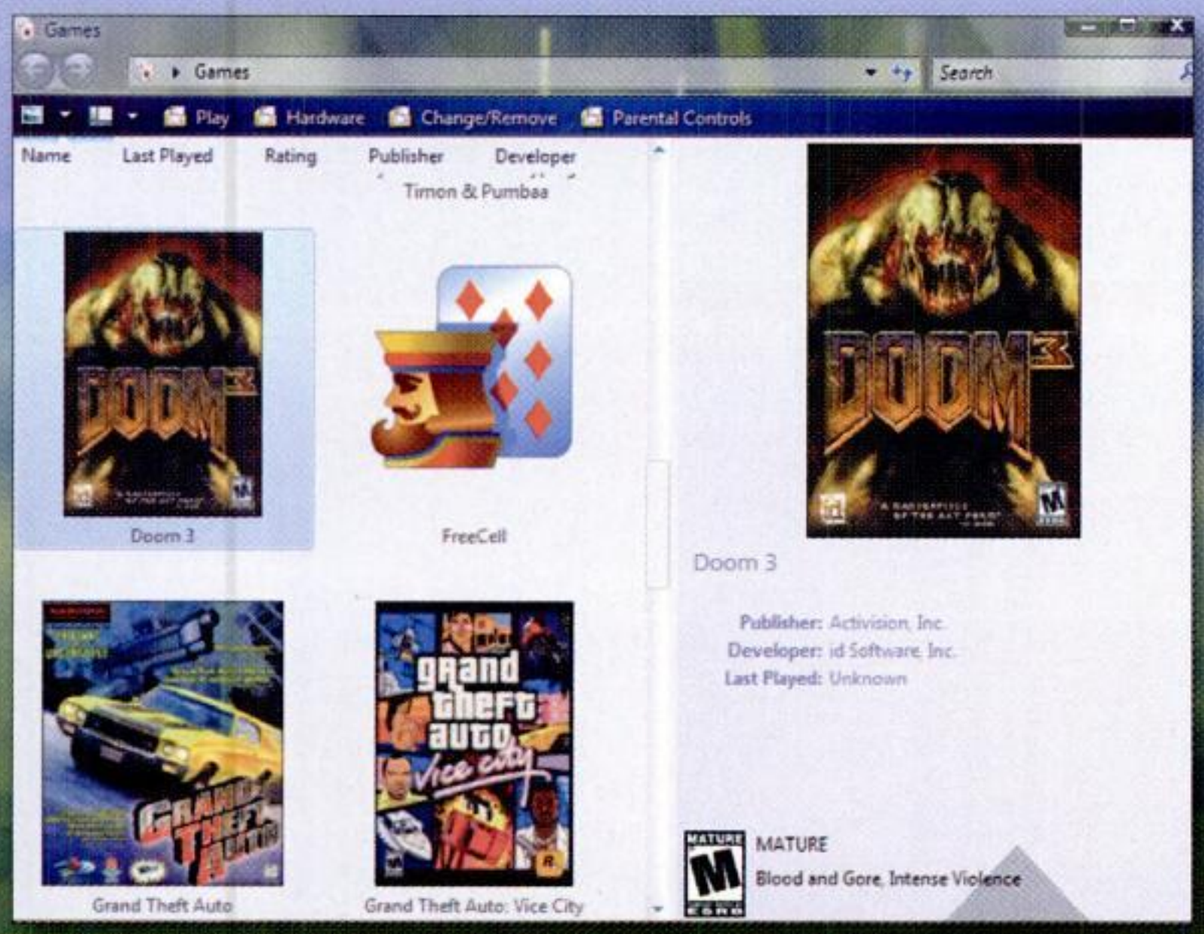
Eye Candy

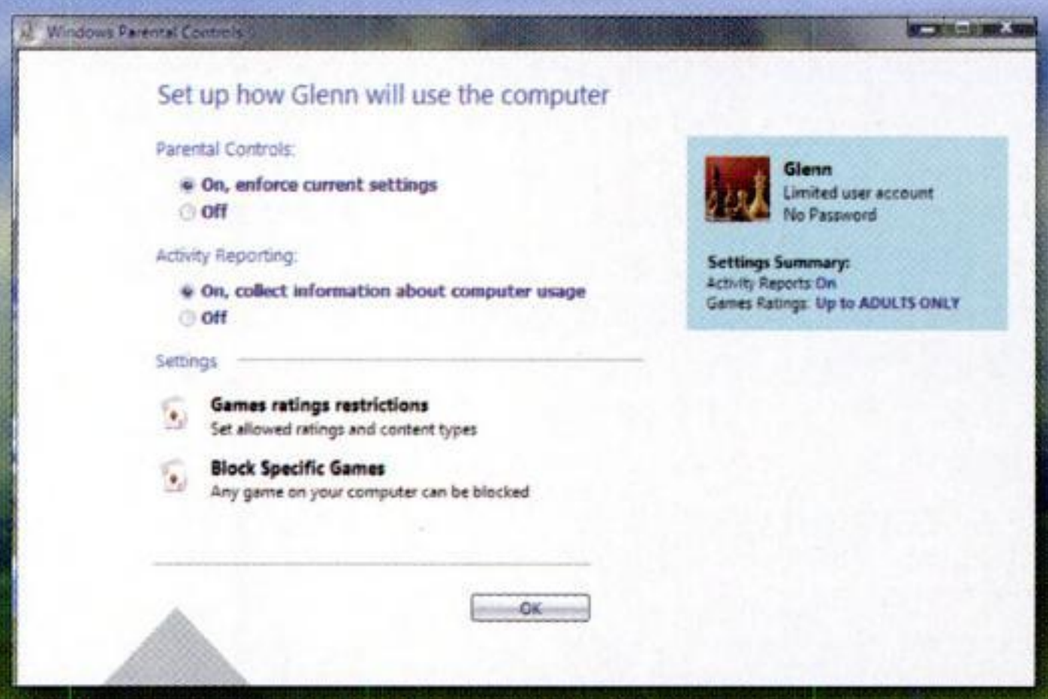
A picture truly is worth 1,000 words. These shots of the Aero interface reveal the building blocks from which Vista is built.



The new Computer window (sans the vestigial "My") includes a graphical representation of free space on all of your drives. The traditional File/Edit/View menus have also been replaced by a series of graphical menus (in the purple bar).

Kiss your accordion menus goodbye! The new Start Menu shares the area where your frequently used programs live with the contents of your Program Files directory. We likee!





The new Games interface will not only automatically keep your games up to date, it also includes parental controls that are enforced by the OS. If you don't want Junior playing *GTA*, he won't even see the directory where it is stored on your system.

The new design for the Control Panel looks nice and seems clever, but in practice it doesn't work very well. We'll stick to Classic View, thank you very much.

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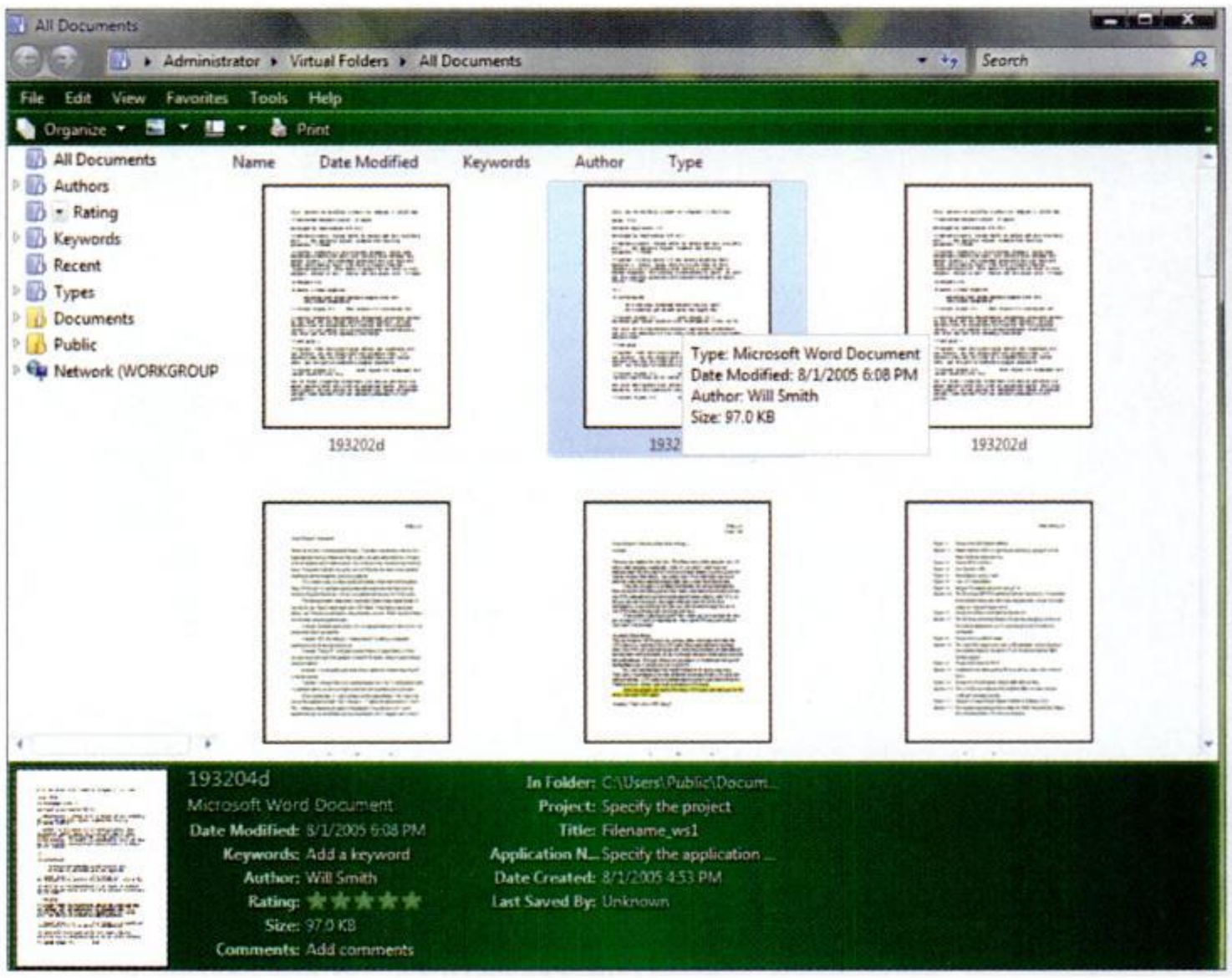
Usability Enhancements

Without new additions that let you use your computer more efficiently, all the eye candy in Vista would be worthless. The majority of usability enhancements will come with Beta 2, but here's a look what's new in Beta 1.

To make Windows easier to use, and make every second spent with your computer more efficient, Vista includes a ton of improvements in raw usability. Everything from the built-in search engine to the all-new document-browsing interface will make it easier to get your work done, so you can get back to using your PC for fun.



The new Aero-ized Documents virtual folder will pull all the work documents you have on your system into one easy-to-work-with area, and will even show thumbnails of the pages!

DOCUMENTS

We've already touched on Aero, but it's important to realize the impact of the vector-based renderer. Because onscreen components scale infinitely in either direction, the OS can effortlessly create a thumbnail image of every document, which will serve as the document icon. Just as with OS X, you can scale your icons from very small size to massive. The difference is that on Vista, the icons look crisp and clear at all sizes.

To clarify, we're not just talking about photos, we're talking about *Word* documents, PDF files, HTML files, and video files. (All of you folks that have 20 documents named "New Text Document.txt" on your Desktop will dig this feature.)

Your photos also get the Aero treatment. You can resize thumbnails from icon-size to nearly full-screen by moving a slider.

MODERN SEARCHING

The search in Windows XP sucks. It's slow, inaccurate, and the only "advanced" feature is that useless dog. The first thing most power users do is disable the default XP search and use the Windows 2000-style one instead, but that still doesn't fix the underlying problem. Even if you index the contents of your drive, it's still painfully slow and searches only file names by default.

Vista's new search is Google-fast, and searches damn near everything on the hard drive. Search looks deep into the files stored on your hard drive. It indexes the contents of all of your documents, the metadata in movies and pictures, and even your email messages. Type in "Bob Johnson" and you'll see every email between you and Bob, all the documents that reference Bob or were written by him, and all the photos he's taken and sent you, all in a split-second.

With the full-speed search in place, we're not sure what to expect from the delayed WinFS subsystem (WinFS will ship shortly after the initial release of Vista).

PORTABLE PROFILES

Many homes these days include multiple computers networked together. But switching between PCs can be a real nightmare, with different bookmarks, email, and game-saves on every machine. These problems will be a thing of the past with Vista's new profile-sharing feature.

Once you establish a relationship between your Vista computers, the OS will transparently sync the contents of your profile directory with all the other computers. Everything saved in your "Documents and Settings/User" folder—saved games, pictures, music, email, bookmarks, and documents—will be accessible when you log on to any computer in your home.

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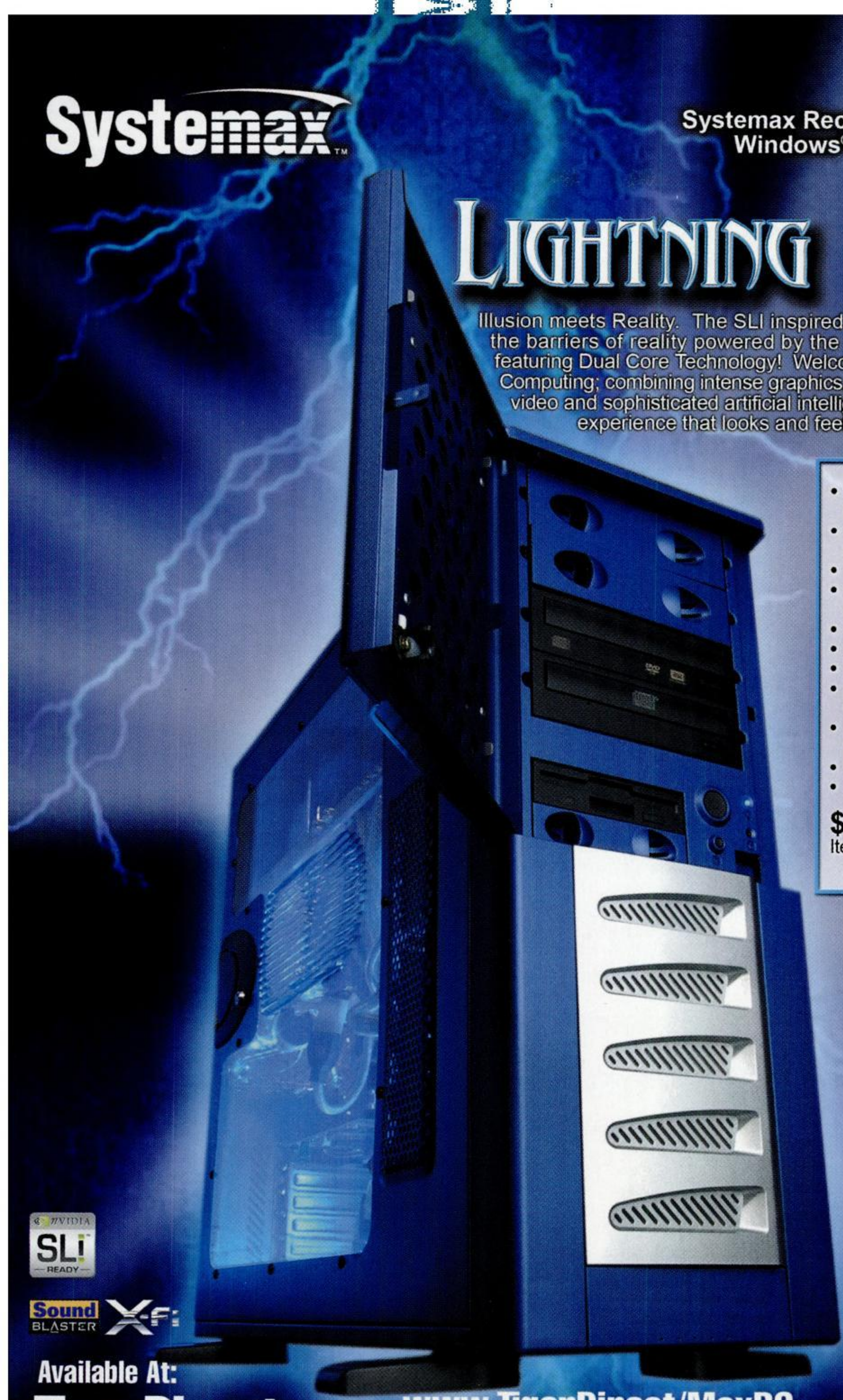

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Windows VISTA Comes Together

Security Info

Here's how Vista will fix the growing problem of malware

Spyware, viruses, and other apps that embed themselves so thoroughly in the innards of Windows that they're virtually impossible to eliminate are a huge problem in Windows XP. Users everywhere are frustrated, and people have even begun to believe there's nothing that can be done about the erratic behavior caused by spyware. That's not the way it should be. One of the main goals of Vista is to curb the spread of malware, and there's a lot of behind-the-scenes stuff in the new OS that makes that possible.

FIREWALL

The firewall included with Windows XP SP2 filters only incoming traffic, which is a good start. But one of the easiest ways to tell whether your machine is infested with malware is to monitor outbound traffic. That's what Vista's firewall does, and we're glad it's turned on by default.

What does that mean for the user? When an app attempts to connect to the Internet, whether to send data or simply to listen for incoming traffic, you'll receive a prompt asking if you want to allow the connection, deny the connection, or always allow the connection. The XP SP2 firewall asks only if your app is trying to listen for incoming traffic.

VIRTUALIZED PROGRAM FILES

What about apps that won't behave well with limited-user accounts? Vista will create a virtual Program Files and Registry inside the user's profile. To the app, the virtualized areas will be indistinguishable from the "real" Registry and Program Files directory. But because they're in the user's profile directory, the app can modify whatever areas it chooses, without any pesky permissions problems.

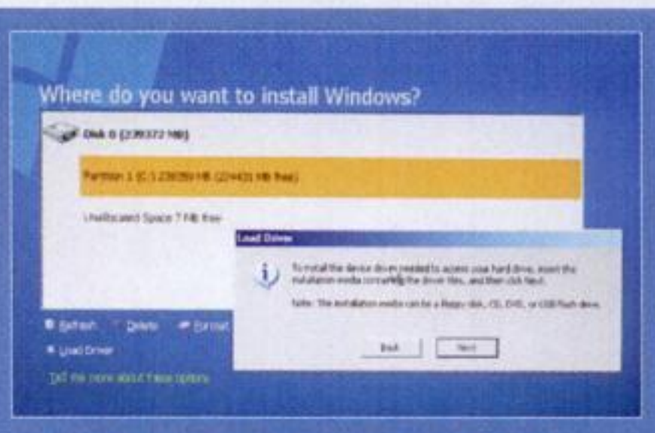
Of course, there's a downside. Any legacy app you install in the virtualized area is only accessible to that user account. If, let's say, *GTA: San Andreas* were a legacy app (it's not), and both you and your roommate wanted to play, you'd have to install it twice, and that would eat almost 10GB of hard drive space. Still, we'd rather suffer dual-installs of a few legacy apps than face another 10 years of inadvertent *CoolWWWSearch* infections. MPC

Windows Security
Windows is helping make your computer secure by asking for your permission before making changes that require administrator rights.
Do you want to turn off this security feature?
Yes
No
If you choose yes, Windows will no longer prompt you for administrator password before you make changes that require administrator privileges. How does this make my computer less secure?

User Access Protection requires you to enter your password when you make a potentially dangerous change to your system, even if you have admin rights.

INSTALL FROM AN IMAGE

Perhaps our favorite feature in Vista is the new image-based installer. The installer dumps an unspoiled disc image on the hard drive after a brief preinstall process, then the OS boots and does Plug and Play hardware recognition. The best part of this? You don't need to press F6 to install third-party storage drivers off a floppy disk. Instead, you can plug a USB key or CD-ROM containing the driver into your rig, and kiss the floppy goodbye forever.



It's not security related, but not having to use floppy disks to install mass storage drivers will keep us from going postal and blowing up the place. Don't you feel safer?

Limited Accounts

The default permissions assigned to all users present the biggest security problem with Windows XP. Instead of encouraging users to run as limited users—users only able to access data in their directories and run apps, but not add or remove software or drivers—XP hands every user admin privileges by default. That means that every application an admin-enabled user runs, like a web browser, also has admin privileges. Should a user click a virus attachment or spyware installer, there's nothing stopping that app from installing and insinuating itself deep in Windows.

Even if you want to run Windows XP as a limited user, it's virtually impossible if you regularly play games.

One of Microsoft's main goals with Vista is to fix the limited-user account problem. Vista also allows you to temporarily switch to an admin-level account to install apps or upgrade drivers, then switch back to a limited-user account when the task is done. XP doesn't do that. MPC

Anytime a limited user attempts to do anything that could compromise the system, he'll have to log on with admin privileges.

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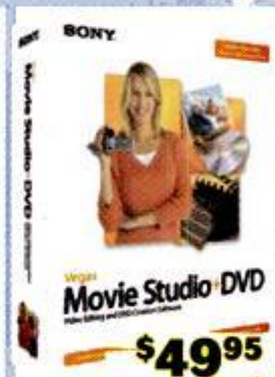

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The XP Doctor is in!

With the aid of his faithful assistant, The Doctor is here to remedy all of your PC maladies

INSTANT SCREENSAVING

If the sleep button on my keyboard can make my computer hibernate, can it be configured to run a screensaver? I password-protect my screensaver and would like to be able to lock down my computer as soon as I leave my desk. I've tried using TweakUI to redirect the sleep button to the screensaver .exe file, but running that only previews the screensaver, it doesn't password-protect the computer. Is there an executable buried somewhere in the Windows directory that runs the fully functional screensaver, or is there a different way I can easily lock down my computer?

—MATT SIENKO

It's wonderful when the first question is this easy! To lock your computer when you walk away, all you need to do is press Windows key+L. You heard it here first.

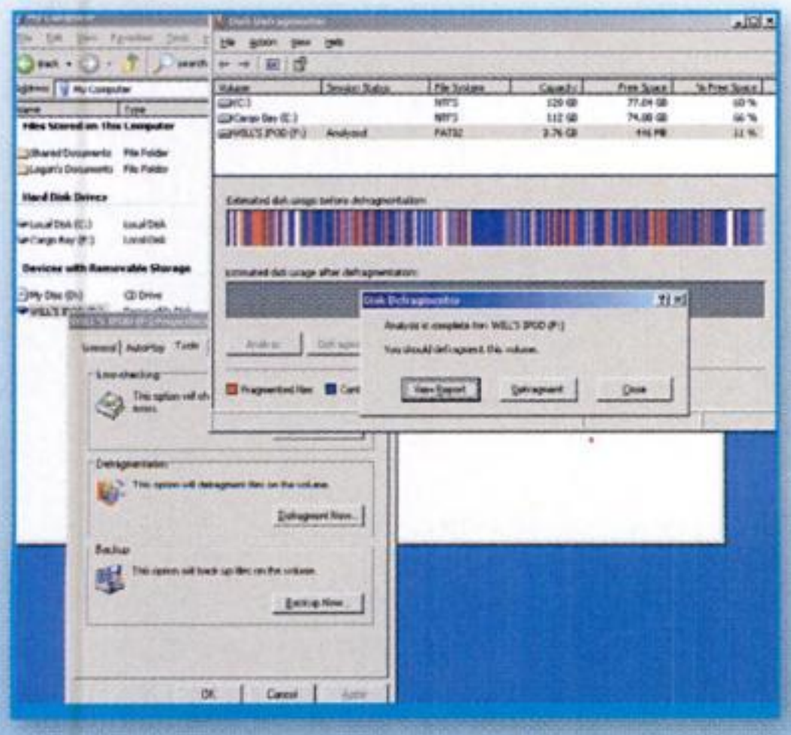
Tired of being pestered by the Windows Security Alert bubble? Use the Security Center control panel to shut it off.

ENOUGH ALREADY!

Is there any way to disable the nagging little Windows security bubble that pops up every time I disable the Windows firewall or turn off my anti-virus program? The executable name is "wscntfy.exe."

— Bill Price

This is the Windows Security Notification, which is part of Windows XP SP2. It will not only nag you whenever you shut down your firewall



Although it seems like it might be a good idea, you shouldn't defrag your iPod. Instead, simply restore the iPod using the Apple firmware update utility and then resync your music.

THE SWEET SOUND OF DEFRAG

As I was browsing my iPod through Windows Explorer, I realized I can defragment it from the Properties menu. The iPod uses a Fat 32 file system, so I imagine it can be defragged just like any other drive. Will it harm my iPod to defragment it? Is it even helpful?

—IPODSTER

Apple recommends against defragging your iPod, and we tend to agree with them. Although we've read some positive reports from people who performed a defrag on their units, when we ran an informal test on our own iPod, we saw no difference in performance when changing tracks or skipping songs. Because there's no real gain from defragging, we don't see a reason to run unsanctioned utilities on the player.

If you're really concerned about defragging your iPod, the Apple-recommended method is to use the *iPod Updater* program from Apple.com and select the "Restore iPod" option. This will wipe all of your music, and restore your iPod to its pristine state. Once that's done, you can resync the iPod with *iTunes* and be back in action.

or antivirus software, it will bug you if Windows doesn't happen to recognize whatever security software you are using. Fortunately, there's any easy way to get rid of it.

Double-click the Windows Security Alerts icon in the Taskbar to open the Windows Security Center. Click the menu item that reads "Change the way Security Center alerts me," in the left-hand menu. When the dialog box opens, remove the checkmarks next to firewall and virus protection. If you don't want to be pestered about automatic updates, remove the checkmark next to this item, too. If you turn off all three alerts, the icon will disappear from the Taskbar. If you decide to turn any of them back on, you'll need to access the Windows Security Center from the Control Panel.

PASSWORDS: A BLESSING OR A CURSE?

I work in a computer store selling laptops. A disgruntled customer set a hard drive password on one of our laptops, so I can't access its contents. Is there an easy way to fix this? Can this feature be disabled to prevent future occurrences, yet still allow other customers to examine our laptops?

—Bob Parlinari

The hard drive lock is there for a reason, and it appears to be doing its job, as it's not allowing you to access the drive's contents. If the Doctor told you how to bypass it, he'd be aiding and abetting laptop thieves nationwide. There's also the small matter of how the Doc doesn't think it's ***possible*** to sidestep a hard drive password.

The password is stored in the drive's firmware, so reformatting the drive won't erase it; plugging the drive into another machine won't work, either. If you can't guess what the secret word is, your only real solution is to obtain the password from the customer, boot the machine, and then reset it. The only surefire way to prevent this from happening to other machines in your inventory is to remove their batteries and secure their power supplies behind the counter, so the machines can't be powered up without your permission. Once you explain to your customers the reason for your caution, they'll likely appreciate the tight security this feature provides.

DISC DISMISSED

I recently burned a DVD-Video with Nero, but I had to reduce the bit rate in order to fit the contents onto a 4.7GB recordable DVD. My DVD burner supports double-layer disc burning, so I figured I could get better quality with a double-layer recordable DVD, which I purchased for almost $10. Unfortunately, there was an error during the process, and now I can't write to my double-layer disc anymore. Is the disc ruined?

—Solidus Kal

In a word, yes. You want to be very careful when burning to expensive double-layer media. The Doctor recommends shutting down any other applications and steering clear of your PC during any double-layer disc burn.

But you might want to ask yourself if it's really necessary to use the pricey double-layer media in the first place. These steps will help with your decision: Create your high bit-rate DVD again, exactly as you did the first time you burned it to a single-layer disc; but instead of burning it to a disc, burn it to a folder on your hard drive using *Nero's* "Write to Hard Disk Folder" option. *Nero* will ask where you want to put the VIDEO_TS folder it will create. Make a new folder with a descriptive name, and point *Nero* to that folder. Repeat these steps to create a second DVD at the lower bit rate.

Once you've created your videos, use your DVD-player application to view each movie from your hard drive. If you're using *Nero Showtime*, right-click the open window, choose Select Source from the menu, click "Play from folder," and navigate to the VIDEO_TS folder. Play back both versions and determine how much quality you're losing by recording at the lower bit rate. Given *Nero's* high-quality transcoder, you just might discover that the difference is barely perceptible.

SP2 CLUSTER CONFLICT

I just did a clean install of XP and Service Pack 2 and ran into a vexing problem. I reformatted my drive and installed from a slipstream XP SP2 disc. All went well. Then I used Partition Magic to change from the default 4KB cluster size to a more efficient 16KB cluster size. At reboot, I received a "disk read error," and my system appeared to be toast. I went around in circles for days with no apparent solution. Finally, I found two postings on Usenet that appear to match my frustrating experience. After going back to 4KB clusters, I'm back in business.

For some unknown reason, clean installs of XP Service Pack 2 will only run with a 4KB cluster size. Upgrades from SP1 will run with larger clusters, but a clean SP2 install will not.

Why would Microsoft sentence us to a 4KB cluster size? My poor little hard drive and I would much prefer larger clusters.

—MAD CLUSTER

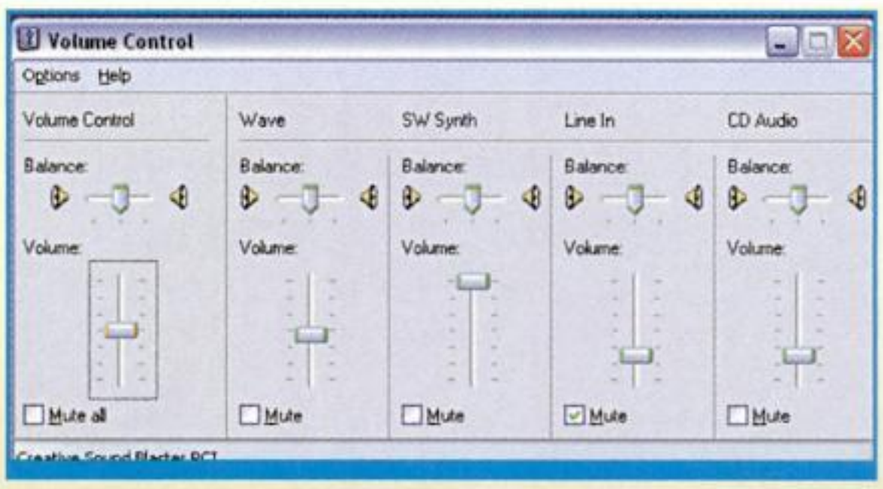
Actually, you probably don't want a larger cluster size. For most home users, smaller clusters are more efficient. You see, each file you store on the hard drive, regardless

OPTIMIZING SOUND QUALITY

I currently have Windows XP Pro running on my computer. I also have an Audigy 2 ZS soundcard paired with Logitech Z-680 speakers. My confusion lies in figuring out the optimal settings for the best sound quality. Do I set the volume control found in Windows to high, set the volume control on the speakers to high, and then use the volume control on the soundcard to adjust the volume from low to high? And what about the volume controls in various programs such as DVD software? Any insight you can shed on this would be appreciated.

—RICK E.

The Logitech Z-680 speakers are fantastic, but they do have a tendency to hiss when the volume levels are set high and there is no audio signal. With this in mind, the Doctor recommends that you set your Windows/Audigy 2 ZS mixer to about half volume and the Z-680 volume to about one-third or one-half volume levels. It's also probably better, in this case, to use the PC to change volume levels rather than the control on the speakers—this way, you can avoid hearing the slight hiss of the speakers when your PC is off. The Doctor recommends against using maximum volume on either the speakers or soundcard, as that will induce the most distortion.



When adjusting your PC's speaker volume, a good place to start is by setting the Master Volume control in Windows (far left, above) to halfway. You should also set your speaker volume to one-third or one-half.

The volume controls on many DVD apps actually change Windows' master volume as well. This is unfortunate. If you finish watching a movie at night with the volume cranked up, the next time you boot your PC, you and your neighbors will be treated to the Windows jingle at full blast. Microsoft has plans to address this in its next OS version.

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The AVOX Jukebox is the easiest way to turn your 2.5" hard drive into a portable audio/video player. With a simple to use ON SCREEN DISPLAY, the AVOX Jukebox can play movies, music, or a slideshow of your pictures when connected to the AV inputs on any television. Since it also doubles as a portable enclosure, you can store your documents, programs, or any other data on the AVOX Jukebox as well. With the built-in high speed USB 2.0 interface, files can be transfer up to 40 times faster than USB 1.1. Easy to use, sleek, and compact, the AVOX Jukebox is the perfect way to make your media as mobile as you are.

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of its size, must take at least one cluster. That means if you save a file that's 1 bit, it will take up one cluster on the drive, and use 4KB of space. Because most home users have lots of small files on their computers, using smaller cluster sizes helps minimize the amount of drive space lost to slack. Therefore, the 4KB cluster size is ideal.

Granted, there are some applications that use large files and can gain a performance edge from using larger cluster sizes. If you use your machine to edit high-definition video, for instance, you might want to hold off on the SP2 upgrade, or alternately, set up a RAID array to use as your scratch disk. Because a RAID array allows you to choose a stripe size independent of the cluster size, you can completely bypass the 4KB pitfall.

YOU CAN'T TAKE IT WITH YOU

What is the best way to install a hard drive loaded with Windows XP from one computer to another? In the past, I have tried clearing out "enum" in the Registry, which leads to an excruciatingly long install. I have also tried setting up a new hardware configuration and selecting the new one each time, with mixed results. Finally, I've tried just installing and letting Windows reconfigure, again with mixed results. I know the right way is to start from scratch and reinstall everything (because of the mobo drivers), but I upgrade frequently and don't always have the time to do this. Thanks for any enlightenment.

—LAURENCE LOWY

In reality, there's no "best" way to move a hard drive that contains Windows from one system to another—it's just not a good idea. Whenever you build a new system or upgrade your motherboard and processor, it's wise to start from scratch. After all, if you're going to spend a bunch of money on hardware upgrades, you don't want to cripple your new machine with a slowed-down OS.

HARD DRIVE SPACE REDUCTION

I just purchased an LGA775 Pentium 4-based PC with the same mobo as the 2004 Dream Machine (Asus P5AD2 Premium). When installing the operating system on the 250GB hard drive, the install disk only recognized 131GB. I continued the installation hoping the problem might fix itself after I installed SP1, but nothing changed. Now I have a 131GB hard drive that should be 250GB. What gives?

—BLAIR BILLIARD

Any installation of Windows XP that doesn't include Service Pack 1 will run into the ol' 137GB barrier, which is the result of an outdated addressing scheme from a time (not many years ago) when hard drives didn't exceed this capacity. Because drives have moved way beyond the puny 137GB barrier, a new scheme has since been introduced, moving the capacity goalposts out to an unthinkable 144 petabytes (one petabyte is 1,000 terabytes!). In order to reap the benefits of the new addressing scheme, it needs to be supported by your motherboard BIOS and you must run Service Pack 1.

Because you're already running Service Pack 1, and we know for a fact your motherboard can run big drives (DM 2004 ran 300GB drives without incident), it's a sure bet your remaining drive space is there at your disposal, it's just not visible in My Computer because it hasn't been partitioned. You can't see the unpartitioned space in Windows unless you look at the drive in Disk Manager, which you access by right-clicking My Computer, clicking Manage, and then clicking Disk Management. You should see your C: drive's full capacity, with 131GB of it labeled "healthy" and the remaining 100GB listed as "unallocated space." Simply right-click this unallocated chunk, select "format," and then select the file system you'd like. Follow the dialog boxes until it's formatted. Keep in mind that once formatted, this drive space will constitute its own partition and show up as a separate drive in My Computer. If you want to combine both partitions into one huge 232GB chunk, you'll need to pony up for Partition Magic (www.powerquest.com), which can make changes to your hard drive's partitions on the fly.

WHO'S IN CHARGE HERE?

I just transferred my operating system to my brand-new Raptor—which is all that with a side of fries, by the way—but when I try to use Windows' built-in Defragmentation tool, I receive an error message claiming that Chkdsk /f is "scheduled." Is that normal when a new disk is introduced to Windows, or what? I just tried again and now the utility is able to analyze the drive, which is not yet fragmented anyway, but still I'm curious: Who scheduled this Checkdisk operation? Not me.

—IOTEST

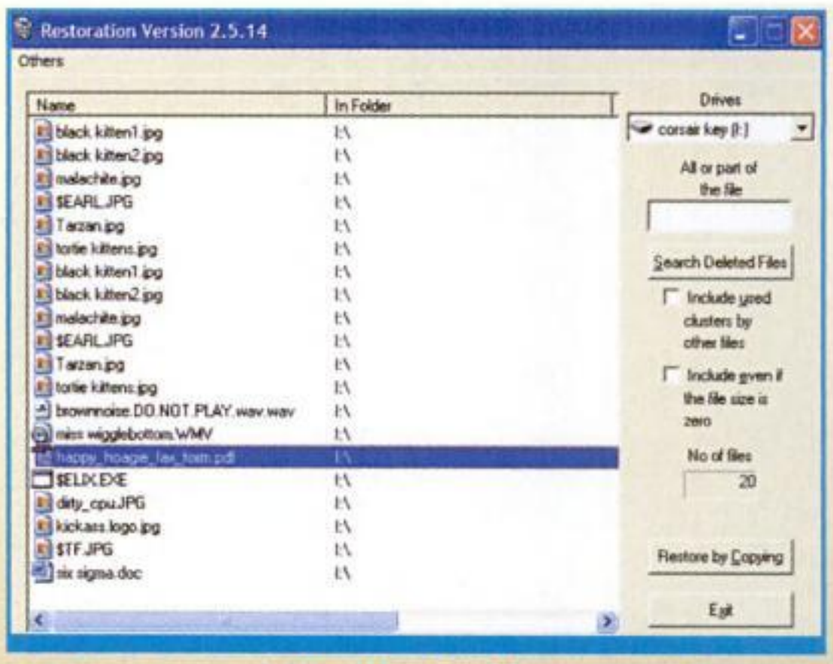
Your operating system scheduled the Chkdsk operation. It might have encountered an error or some bad sectors when you were transferring your OS to the new drive, and when this happens the OS automatically schedules its drive diagnostic utility, named Chkdsk, to run on the next reboot and fix whatever errors it finds (that's the "/f" part of the command). You've likely seen this activity before. When your PC crashes, Windows will often automatically examine the hard disk for bad sectors upon reboot. If you ever encounter weirdness and want to schedule a Chkdsk yourself, click the Start menu, choose Run, and type "chkdsk /f" in the box. The next time you reboot

COME BACK, LITTLE SHEBA

I use my USB flash drive to move files between my desktop and laptop PCs, and occasionally when a friend needs a small file. Somehow, a file I thought I had a backup copy of on my desktop machine got deleted from my USB drive. As it turned out, I didn't have a backup. When a file is deleted from a USB flash drive, is it deleted in the same way that a file is from a hard drive (by removing only the reference to the file)? And if so, is there a way to restore or reclaim the deleted file?

—BRADLEY STAPLES

USB keys do indeed work like regular hard drives in the sense that "deleted" files aren't actually destroyed when you hit the "delete" key. The deleted file remains in place, but all references to it are erased. The now-invisible files will remain on the drive until they are overwritten by new data. As long as the data hasn't been overwritten, it's very easy to un-delete it. Just download a handy utility called Restoration, which you'll find at www.snapfiles.com/get/restoration.html. This freeware utility will scan volumes for deleted files that are still recoverable. Point it to your USB key and it will show you all the files it can recover. Select the files you wish to recover, click the "restore by copying" button, and follow the instructions. We've also got an in-depth story on finding and restoring lost data on page 56.



The freeware utility *Restoration* can salvage files from hard drives, USB keys, and other flash-based storage media.

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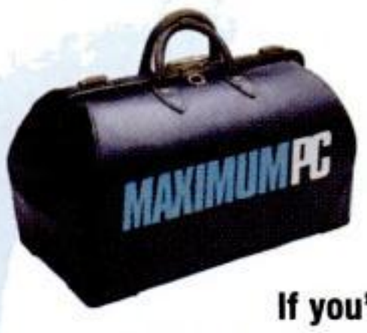


your system, the operation will run. If you'd like to see which, if any, tasks are scheduled, click the Start menu, choose All Programs > Accessories > System Tools > Scheduled Tasks. You can cancel scheduled tasks here, too.

OUT, OUT DAMNED SPOT!

I do not use and cannot stand MSN Messenger—I consider it to be the root of all things evil. When I installed Windows, I specifically indicated that I didn't want that component, and yet the Messenger craplet is still in my Taskbar. I de-selected it from startup using the MSCONFIG utility, but it doesn't seem to matter; I reboot, open Outlook, and it promptly comes back. I realize that I wouldn't have this problem if I used Thunderbird as an e-mail client, but Thunderbird doesn't support HTML mail.

—B.J. KOHO

First of all, *Thunderbird* does support HTML mail, though we don't know why anyone would really want that feature.

As for your *Messenger* issues: Assuming you unchecked the little box labeled "Integrate Messenger with Outlook" in *Outlook's* General options tab, getting rid of *MSN Messenger* can be tricky. The first thing you should do is install the latest version of *Outlook*. Some older versions are notorious for not honoring the user's choice to disable *Messenger* integration. Once you've updated *Outlook*, you might still occasionally see the unwanted *Messenger* program. Sometimes Microsoft will sneak *Messenger* updates into the Critical or Optional updates from www.windowsupdate.com, which automatically resets most of the *Messenger* preferences. If you never install the *Messenger* updates, this won't be a problem.

DRAG AND PLOP

I regularly use Windows XP's drag-and-drop tool to place files into the CD folder before I write them to CD. But the feature doesn't seem to work with recordable DVDs. Is this normal?

—PAUL FLETCHER

One might think that Windows XP would include native support for burnable DVDs, but sadly, it does not. The Doctor wholeheartedly recommends *Nero Ultra* ($80, www.nero.com) for your DVD-burning needs.

OLD LOGIN TO NEW

The login screen on my Windows XP SP2 box is the old "hit the <Ctrl-Alt-Delete> key to login in" type. On my wife's computer, the screen comes up and shows the different users, and you only have to click the appropriate user. How can I change mine to look the same?

—DAVID MAURICE

You need to enable the Welcome Screen. To do that, open the Control Panel, go to User Accounts, then click "Change the way users log on to this computer." Click "Use the Welcome Screen," and press OK. There are some circumstances where you won't be able to use the Welcome Screen, though. If your computer is part of a Windows domain or you use certain VPN clients, the Welcome Screen option is, sadly, unavailable.

FELINE FETISH

Ginny is a very bad kitty.

I have a problem. Ginny, one of my four cats, is constantly licking my CDs. She seems to prefer CD-Rs and DVD-Rs to pressed media. This was cute at first, but it's becoming a problem as some of my CDs are getting stained with cat saliva. Is cat saliva bad for the discs? More importantly, is licking the discs bad for the cat? And what is it about the discs that would make a cat want to lick them?

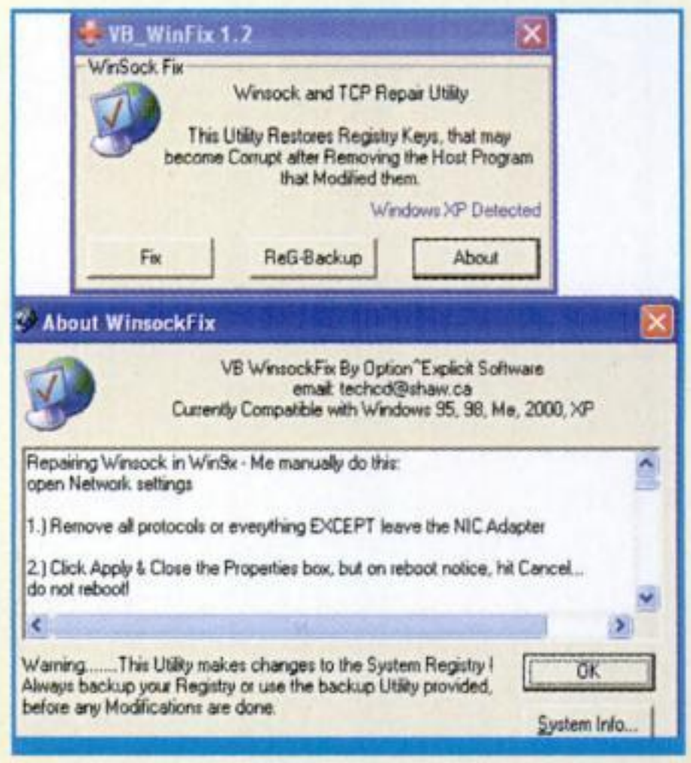
—Matt Putzel

The best way to curb this behavior is to catch Ginny in the act of licking your CDs and tell her firmly "Bad cat!" Next, take all your blank media and put them in jewel cases. Problem solved. As for whether or not the CDs are harmful to Ginny's health, our contact at Verbatim tells us there's nothing in the outer layer of the disc that would harm a cat. As for *why* she licks the CDs, it's probably because she either likes the taste or the way it feels on her tongue. In fact, one of the Doctor's cats loves to lick the window blinds—probably for the same reason.

There's not much you can do to dissuade Ginny from licking your CDs, aside from spraying her with a water bottle when you catch her in the act; but that would also get your precious media wet. MPC

COULD IT BE KARMA?

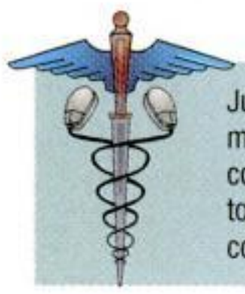
My PC freezes up a minute or two after I launch any peer-to-peer application. It doesn't matter which one—Kazaa, Bittorrent, eMule—every one causes my PC to lock up so I have to reboot. The weird thing is that I can browse the web, use FTP, and do pretty much everything else online. I've checked for spyware but can't find any. Could I have downloaded an application that deliberately sabotages P2P apps under Windows XP?


VB_WinFix 1.2
WinSock Fix
Winsock and TCP Repair Utility
This Utility Restores Registry Keys, that may become Corrupt after Removing the Host Program that Modified them.
Windows XP Detected
Fix
ReG-Backup
About
About WinsockFix
VB WinsockFix By Option"Explicit Software
email: techcd@shaw.ca
Currently Compatible with Windows 95, 98, Me, 2000, XP
Repairing Winsock in WinSx - Me manually do this:
open Network settings
1.) Remove all protocols or everything EXCEPT leave the NIC Adapter
2.) Click Apply & Close the Properties box, but on reboot notice, hit Cancel... do not reboot!
Warning.....This Utility makes changes to the System Registry ! Always backup your Registry or use the backup Utility provided, before any Modifications are done.
OK
System Info...

Winsock XP Fix can perform quick and easy repairs on your PC's Winsock settings.

Well, it's possible, but doubtful. It's more likely you installed or removed software that messed with your network or Winsock settings (Winsock stands for "Windows Sockets," and it's the interface between applications and TCP/IP). In this case, the damage is preventing you from connecting to P2P networks.

Here's a quick and easy-to-swallow prescription: Go to www.softpedia.com/get/System/OS-Enhancements/Winsock-XP-Fix.html and download *Winsock XP Fix* (if this site is down, do a Google search for "Winsock XP fix," but make sure you download it from only a trustworthy source.) Launch the executable and click ReG-Backup (which will create a backup copy of your Registry settings—just in case). When the backup is finished, click Fix. The process takes about 20 seconds, after which you'll need to reboot. From there, you should have no problem using P2P applications to share what the Doctor is certain are works in the public domain.



Just as the female praying mantis can't help but feast on the body of its mate, the Doctor is compelled to lord over ailing PCs—in a good way. If your computer is misbehaving, acting up, or generally out of whack, send an e-mail to **doctor@maximumpc.com** and the Doc will do all he can to fix your computing problems.

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Ten Things to Try If...

Windows Keeps Crashing

Straight-shooting fixes for Windows' most common fatal errors

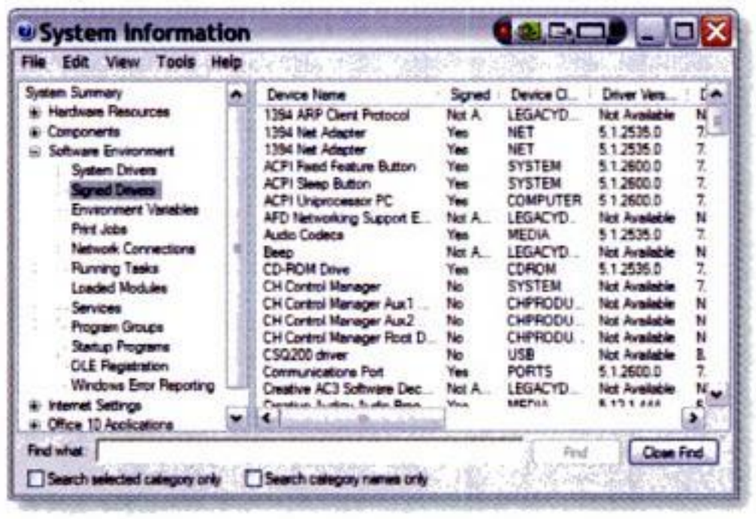
1. Flaky Memory: Many unexplained crashes can be traced to physical damage to memory. Microsoft has a diagnostic tool you can use to try to isolate the error—get it here: http://oca.microsoft.com/en/windiag.asp. Don't mix and match different types of DIMMs!

2. Blue Screen of Death: Though much more uncommon than with Win95, XP still experiences STOP, or fatal exception, errors that are displayed via a blue screen with white type. A STOP error is serious and can usually be traced to a hardware issue. Write down the eight-digit number in the error message and search for it on Google, which is usually fruitful. Microsoft's list of STOP errors can be found at http://msdn.microsoft.com/library/en-us/w2kmsgs/6077.asp. Here's another favorite: http://aumha.org/win5/kbestop.htm.

3. Clean Install: If WinXP is really driving you to drink, consider a complete reinstall, preferably including formatting the partition your OS was stored on. (For complete details on how to do this, see story on page 36.)

4. Repair the Registry: Other than RegEdit Export/Import, the only way to fix the registry is to use System Restore to roll your OS back to a day and time when it was working perfectly. Set a new restore point whenever you install a major new software program or piece of hardware!

5. Dinky Drivers: According to Bill, around 40 percent of Windows crashes are attributable to bad drivers—software drivers, not the bus variety. So try to install only drivers bearing Microsoft's "WHQL" stamp of certification. To see which of your drivers are WHQL-certified, go to Start>Programs>Accessories>
System Tools>System Information. Then select the Software Environment>Signed Drivers branch.



6. Slowpoke: If your PC is experience random lockups or crashes, or is suddenly running slowly, listen for a repetitive "clicking" sound from your hard drive. This could signal a forthcoming drive failure. Back up your data, and think about a new drive.

7. Stop That: Have you overclocked your system? Come on, be honest. If so, and it's now failing, Big Bill may not be to blame. Set your BIOS back to its default settings and see if your problems "disappear."

8. Out, Out, Damn Spies! If you're witnessing generally wacky behavior on the part of your OS, spyware and/or Trojans are typically to blame. The easiest solution is to run a scanning program, such as Ad-Aware or Spybot (both are on the disc that came with this issue). These programs use a database of known naughty software code to search for and then remove or disable it with a single click.

9. Corruption: It's not just for politicians. To check for corrupt system files and try to fix them, select Start>Run, type SFC/SCANNOW and click OK. Windows will search for any protected files that may have become damaged.

10. ActiveX Baddies: Browser hijacking is another favorite way for spyware to hook into your PC, often resulting in system crashes. Check what ActiveX controls are running on your system with the free **Browser Helper Object Demon**, available at www.definitivesolutions.com/bhodemon.htm. You can disable ActiveX completely, which is the safest thing to do: Go to Start>Settings>Control Panel and select the Internet icon and then the Security tab. Select the Internet zone, make sure its setting is "Medium." Now, select the "Custom Level" option and click the Settings button. Check the Disable box for "Script ActiveX controls marked safe for scripting." MPC

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Have your cake and eat it too by enabling your system to run multiple versions of Windows.

How To Get Old Programs to Run on XP

BY STEVE **KLETT**

Windows XP has made big strides when it comes to backwards compatibility with programs developed for previous versions of Windows. Often, you can get a particularly stubborn legacy application to run via XP's Compatibility Mode (see sidebar).

However, there are still quite a few programs, particularly games designed for Win98 or Win95, that simply won't run on XP. In this case, you've got three choices:

1. Put the software on the shelf and start your own personal museum.
2. Run a second, older PC with Win95 or Win98 installed, using a KVM switch to share a single monitor, keyboard, and mouse. (See boxout.)
3. Set up a multiboot XP installation.

Multibooting XP with Win98

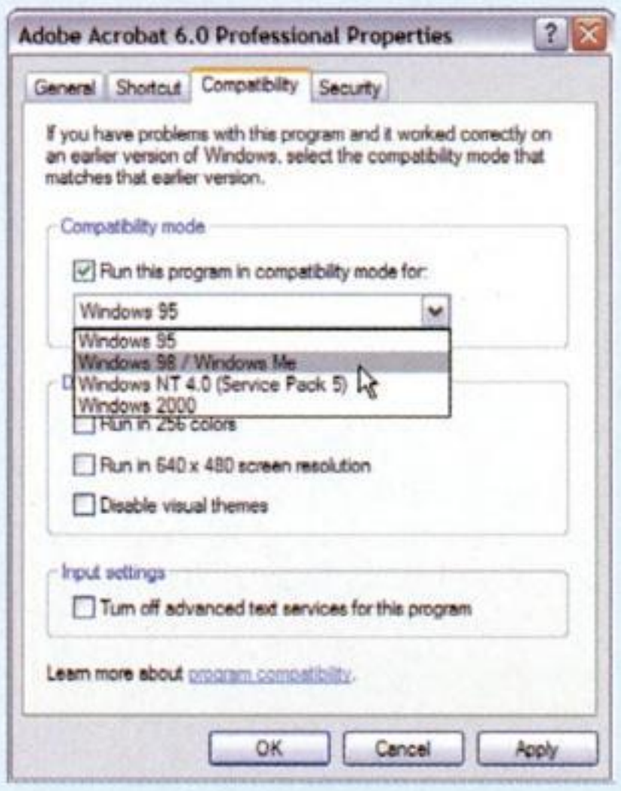
You can install two or more operating systems on your computer, and then choose the one that you want to use each time you boot your machine. This is known as "multibooting."

It can be tough getting older games, such as European Air War, to run on WinXP. Multibooting can save the day.

The first rule of thumb is to install the oldest operating system first, because if you don't, critical system files could be overwritten. And, before you can install a multiboot configuration, you must partition your hard drive. If you already have installed Windows 98, you can partition your drive—without wiping your data—using third party software such as *Partition Magic 8* (on the disc).

If you're starting from a clean install, you can create multiple partitions that will each function as a separate, logical drive on a single hard drive by choosing Advanced Options during Setup and following the prompts—create one partition for Win 98 and a second for WinXP, which will typically be your C: and D: drives. Partition sizes of at least 10GB each are ideal. (Note: Make sure you have all the drivers you'll need to set up your hardware for each OS *beforehand*, preferably on a CD.) Install Win98 to the C: drive, which must use the FAT 16 or FAT 32 file system, and then WinXP to the D: drive, which should use the NTFS file system. When you want to use your old Windows 98 apps, reboot your PC and select Win 98 from the boot-menu, and you're off to the races.

It's a cumbersome process, but multibooting with WinXP is not that difficult—and the end result of finally getting to run a favorite old game again, such as *European Air War*, is worth it! For more excellent multibooting tips, go to **www.microsoft.com/windowsxp/pro/using/howto/gettingstarted/multiboot.asp.** MPC


Adobe Acrobat 6.0 Professional Properties
General
Shortcut
Compatibility
Security
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version.
Compatibility mode
Run this program in compatibility mode for:
Windows 95
Windows 95
Windows 98 / Windows Me
Windows NT 4.0 (Service Pack 5)
Windows 2000
Run in 256 colors
Run in 640 x 480 screen resolution
Disable visual themes
Input settings
Turn off advanced text services for this program
Learn more about program compatibility.
OK
Cancel
Apply

Before you resort to going the multiboot route, make sure to exhaust XP's built-in Compatibility Mode options, as these often can get a reluctant program kick-started.

Compatibility Mode Explained

If the legacy program in question won't even install, navigate to the setup file on the installation CD, usually called "setup.exe," and right-click on it. Select the Compatibility tab, check the Compatibility Mode box, and choose the OS the software was programmed for. Then try launching the set-up program as you normally would. If this doesn't work, try checking the rest of the options offered under the Compatibility tab, one at a time, re-launching set-up after each change.

So what do you do if the program installs just fine, but crashes to the desktop when you try to launch it? In this case, alter the Properties of the program's desktop shortcut the same as you did for the set-up executable. Right-click on the desktop shortcut, select the Compatibility tab, and check the appropriate boxes—you may have to try different combinations before it works. (You also can go online and try a Google search for tips from others who've had similar difficulties getting the same program to run under XP.)

Easily Use Multiple PCs with a KVM Switch

Most of us have an old PC or two gathering dust in the basement. These make great secondary machines that you can use to run an older version of Windows, such as Win98. You can dramatically reduce required real estate with a device called a "KVM" (keyboard, video, mouse) switch, which will let you use the same keyboard, mouse, and monitor to control both—or even up to four—different systems. Prices typically range from $50 to $200.

KVM switches, such as logear's MiniView III, make it easy to use multiple PCs simultaneously.

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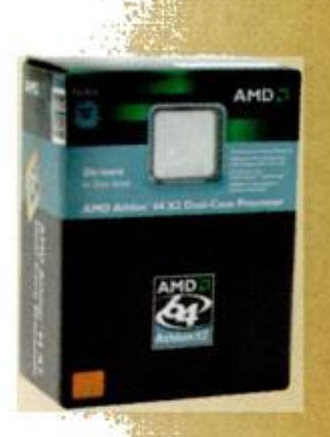

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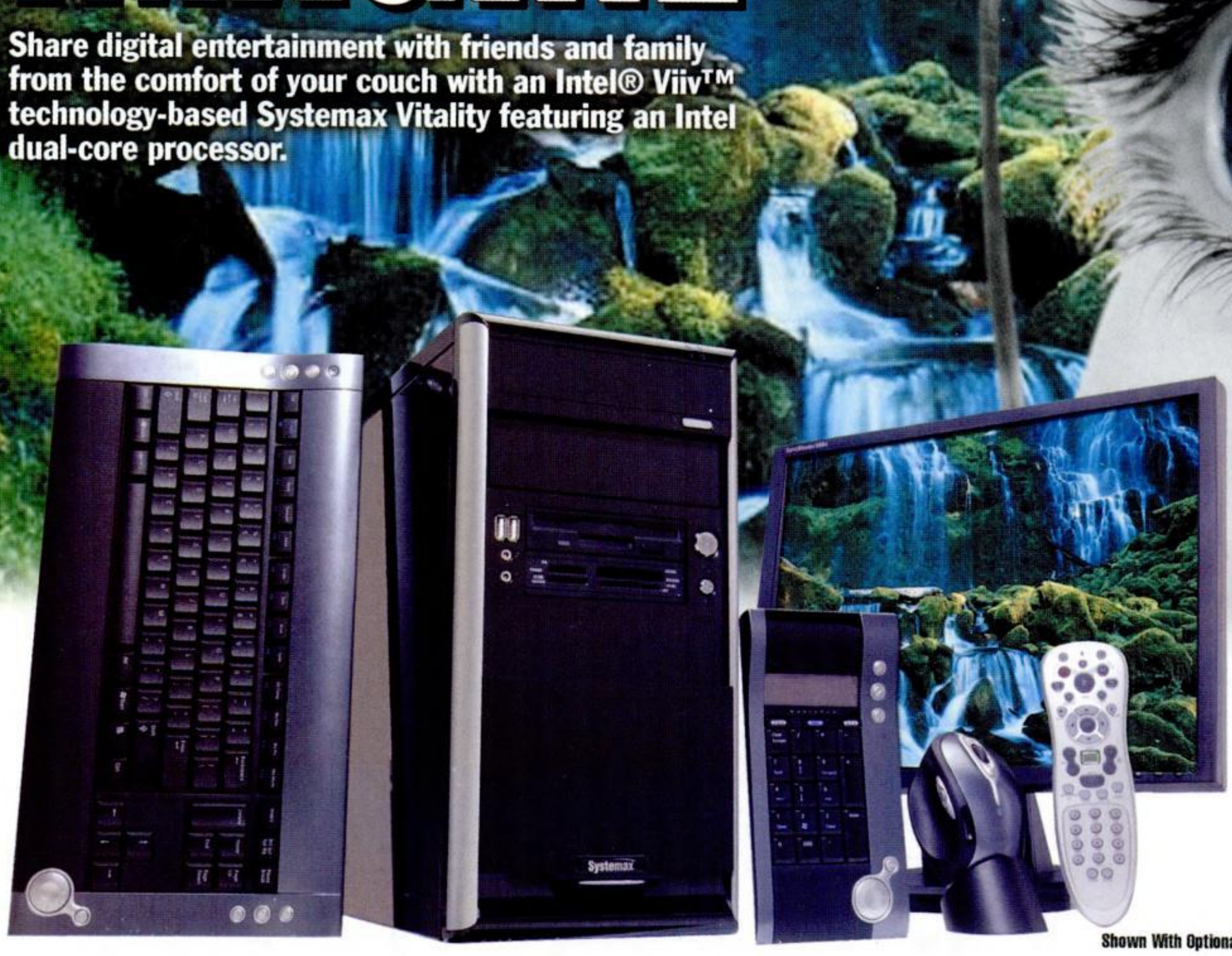

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